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**THE ROLE OF
INSTITUTIONS IN AGRICULTURE SECTOR
DEVELOPMENT OF MYANMAR**

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The Role of Institutions in Agriculture Sector Development of Myanmar

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The Role of Institutions in Agriculture Sector Development of Myanmar

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Abstract

Agriculture plays an important role in Myanmar's overall economic performance and institutions are integral part for the development of the agriculture sector, although there are many determinants of agricultural development. During the colonial period, the private property rights of land by the British government led to area expansion for agriculture rather than yield and productivity. Credit institutions, free marketing system and secure market for rice export resulted in agriculture sector development, particularly rice production and export. However, these policies benefited only private money lenders and foreign trade companies and not to Myanmar farmers as many farmers were left indebted, landless and as tenants. Then, there were also no significant improvements in other institutions such as irrigation facilities, research and development, and farm mechanization etc. After independence, the institutional changes by successive Myanmar governments were improper, insecure and ineffective such as monopolization of marketing for agricultural products particularly rice, by the government. The Land Nationalization Act aimed for the redistribution of land to poor landless farmers resulted in land fragmentation. Likewise, other institutional developments were also not effective. However, significant and explicit institutional change was implemented during the socialist period. The green revolution was one where utilization of high yielding varieties for crops, mainly paddy was conducted. As a result, it reflected yield and the agricultural production, but it was only effective during the late 1970s and the early 1980s. Since 1988 removal of restrictions on pricing and marketing for agricultural products and introduction of summer paddy programme supported to some extent in increase of production and export of other crops apart from rice. However, there are still some weaknesses in institutions. Such that these institutions should be strengthened and effective to sustain the development of the agriculture sector.

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List of Abbreviation

AC	Agriculture Corporation
AED	Agricultural Extension Department
AFPFL	Anti-Fascist Peoples' Freedom League
AFPTC	Agricultural and Farm Produce Trade Corporation
AMD	Agricultural Machinery Department
AFPFL	Anti-Fascist Peoples' Freedom League
APB	Agricultural Project Board
ARDC	Agriculture and Rural Development Corporation
ARI	Agricultural Research Institute
BAAC	Bank for Agriculture and Agricultural Cooperatives
BCC	Burmese Chamber of Commerce
BOI	Board of Investment
BPBE	Burma Provincial Banking Enquiry
BSPP	Burma Socialist Programme Party
CARE	Cooperative for Assistance Relief Everywhere
CARI	Central Agricultural Research Institute
CARTC	Central Agriculture Research and Training Centre
CBM	Central Bank of Myanmar
CCMCL	Central Committee for the Management of Cultivable Land
CGIAR	Consultative Group on International Agricultural Research
CSO	Central Statistical Organization
DAB	Department of Agriculture (Burma)
DAP	Department of Agriculture Planning
FAO	Food and Agricultural Organization
FFS	Farmer's Field School
GA	General Administrative
GDP	Gross Domestic Product
GHS	German History School
GM	Genetic Modified
GRET	German Relief and Emergency Team

HYVs	High Yielding Varieties
ICARD	Information Center for Agriculture and Rural Development
ID	Irrigation Department
INGOs	International Non Government Organizations
IRRI	International Rice Research Institute
LAC	Land and Agricultural Committee
LUCs	Land Use Certificates
LUD	Land Utilization Department
LURs	Land Use Rights
MAS	Myanmar Agriculture Service
MAB	Myanmar Agricultural Bank
MADB	Myanmar Agricultural Development Bank
MAPT	Myanmar Agricultural Produce Trading
MARDB	Myanma Agricultural and Rural Development Bank
MCSCs	Myanmar Rice Specialized Companies
MCSE	Myanmar Cotton Silk Enterprise
MFE	Myanmar Farm Enterprise
MIC	Myanmar Investment Commission
MICDE	Myanmar Industrial Crops Development Enterprise
MIS	Market Information Service
MJE	Myanmar Jute Enterprise
MJT	Myanmar Jute Industries
MOAI	Ministry of Agriculture and Irrigation
MOAC	Ministry of Agriculture and Cooperatives
MoARD	Ministry of Agricultural Research Department
MPCE	Myanmar Palm and Cashew Enterprise
MRIA	Myanmar Rice Industry Association
MRSCs	Myanmar Rice Specialized Companies
MRTA	Myanmar Rice Traders Association
MSE	Myanmar Sugar Enterprise
MWRC	Myanmar Water Resources Committee

NAEC	National Agricultural Extension Centre
NARS	National Agricultural Research System
NEO	New Economics of Organization
NESDP	National Economic and Social Development Plan
NGOs	Non Government Organizations
NIE	New Institutional Economics
OIE	Old Institutional Economics
O&M	Operation and Maintenance
PACT	Private Agency Collaborative Together
PBUB	People's Bank of the Union of Burma
PPD	Plant Protection Department
PPP	Public Private Partnership
PTAC	Post-Harvest Technology Application Centre
R&D	Research and Development
RDE	Research and Development, and Extension
R&E	Research and Extension
RLAC	Report of Land and Agriculture Committee
SAB	State Agriculture Bank
SAMB	State Agricultural Marketing Board
SCS	Selected Concentrative Strategy
SD	Seed Division
SEEs	Several State Enterprises
SHY	Special High Yielding
SLD	Small Loans Division
SLORC	State Law and Order Restoration Council
SPDC	State Peace and Development Council
SPMB	State Pawnshop Management Board
SWOT	Strengths, Weaknesses, Opportunities, Threats
TFG	Ten Farmers Group
T&V	Training and Visit
UBAMB	Union of Burma Agricultural and Marketing Bank

UBCCI	Union of Burma Chamber of Commerce and Industry
UMCCI	Union of Myanmar Chamber of Commerce and Industry
UMFCCI	Union of Myanmar Federation of Chamber of Commerce and Industry
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
USAID	U.S. Agency for International Development
USDA	Union Solidarity and Development Association
UNESCAP	United Nations Economic and Social Commission for Asia and Pacific
VBARD	Vietnam Bank for Agricultural and Rural Development
VEMs	Village Extension Managers
VND	Vietnamese Dong
WHO	World Health Organization
WRUD	Water Resource Utilization Department
WTRPP	Whole Township Rice Production Programme
WTCPP	Whole Township Crop Production Programme
WUG	Water User Groups
WWII	World War II
YAU	Yezin Agricultural University

Chapter 1

Introduction

1.1 Rationale of the Study

There have been some very significant changes in the direction of development in the economic theory in the 1970s. The role that institutions play in shaping economic behavior has been reassessed. The central message of the New Institutional Economics is that institutions matter for economic performance. The role of institutions in the economic development becomes a prevailing subject matter at present. The impact of institutions and their changes on the economy may be different between developed and developing countries, even though there are also differences among developing countries. Negative or positive impact can be influenced by path-dependency, development and effectiveness of institutions and their players, rigidity of attitude and behavior, responsiveness of citizens and society, and right pacing and momentum of changes.

The physical, social and natural environment of agriculture is noted to be quite favorable for and conducive to agricultural development in general and development of crop cultivation and fisheries production in particular. However, there is no need to stress the importance of the fact that the effectiveness of these favorable factors is dependent on the favorable supportive environments including policy and institutional frameworks.

There are many determinants of agricultural development such as land, labor, capital, technology and so on. Additionally, institutions are crucial for agricultural development to raise farm income, to uplift economic and social life of farmers, and in turn, to contribute to poverty alleviation and rural development. Institutional environment and arrangements play an important role in agricultural development through promoting exchange and protecting property. Specifically, agriculture sector in developing countries suffers not only from uncertainties such as weather but from problems of information, inadequate competition, and weak enforcement of contracts.

Building institutions that reduce transaction costs for farmers can greatly improve the way agricultural markets operate. This is especially important for poverty reduction, because poor people are more likely to live in rural areas and make their living from agriculture-related activities. Well-functioning agricultural markets and secure and

transferable rights to land stimulate cultivators for their production, income, investment and reduce uncertainties. Moreover, institutions for generating and disseminating agricultural technology directly affect the yields and risk inherent in agricultural production. The interlinked institutions governing farmers' physical and financial assets- those for land and finance- are important.

Myanmar, like other developing countries, is an agriculture-based economy with more than 70 % of population living in the rural area. The agriculture sector contributes one-third of gross domestic product (GDP) and two-thirds of total employment. Thus, it also provides food supply for all citizens and raw materials for manufacturing sector. Agricultural exports accounts for about 16% of the country's total exports.

With the importance of this sector, governments of Myanmar have made efforts for the development of agriculture sector. Depending upon their changes in the administrative structure and policies, agricultural institutions are developed in accordance with the economic systems. Institutional changes in agriculture sector greatly influenced the development of the sector in terms of cultivation, production and exports.

There were tremendous institutional changes in Myanmar before and after independence. Specifically, regarding the land policy and property rights, British government practiced free trade land policy and private property rights of land during the colonial period. These were incentives to Myanmar farmers and they extended their cultivation through the land expansion. Moreover, the government gave tax exemptions for expansion of land and for immigrants to work in agriculture. On the other hand, private money lenders mainly Chettiars provided easy agricultural credits to farmers with collaterals. In addition, other factors such as rising prices of paddy and transportation improvements led to the development of agriculture sector.

As a result, production and export of paddy dramatically increased during this period. And Myanmar was the largest exporter of rice due to tremendous increase in rice export. It was attributed by the free trade policy, especially laissez faire policy or marketing policy and secure export market for rice. Thus, it can be said that the agriculture sector developed during the colonial period. However, it was a lop-sided development mainly dependent upon only one crop, rice. Moreover, benefits of the development were for government and the foreign companies. With the Great Depression,

decrease in rice prices and exploitation of marketing companies, farmers lost their lands and became indebted. Lastly, even most farmers became landless and tenants. The British government tried to solve these problems, especially land holding and tenants' rights by submitting reports of investigation committees and drawing bills. However, they were not approved, enacted and effective.

Thus, after gaining independence, parliamentary government enacted Land Nationalization Act of 1948. The State was the owner of land and farmers had right to till. The government prohibited transferable right of land, mortgage and lease. On the other hand, the government established marketing board and monopolized marketing and pricing for commodities, especially rice in both domestic and external trade. Moreover, the government intervened in cultivation by setting planned crops, procurement system, and compulsory delivery system. Successive governments have used agriculture as a milk cow to extract surplus through fixing the procurement price of rice well below the world market price.

On the other hand, production was controlled by quota and production targets. These policy failures of a command economic system and the lack of sound institutions (institutional barriers) have trapped the agriculture sector in a vicious circle of low income and low or no incentives to invest for farmers, leading to low productivity and low income again. The government tempted to exploit the agriculture sector by imposing monopolistic prices for paddy that are below world prices, though supplemented with subsidized inputs, that farmers make only just enough to survive. From time to time, the objectives of heavy handed government control over agriculture is less for keeping stable prices for farmers or protecting them from the vagaries of swings in international agricultural prices than for revenue generation and provision of subsidized food staples to the urban constituents to maintain political stability.

Even when under the liberalization in foreign trade in 1987 introduced by the State Law and Order Restoration Council (SLORC) and later by the State Peace and Development Council (SPDC) government after 1988, the compulsory procurement of rice at below the world price continued. However, one remarkable power of open market was clearly demonstrated when the production, procurement, sales and export of beans and pulses were liberalized. It was the most important task in agricultural development,

with improving competitive structures through supportive institutions and providing facilities. Again, the government had liberalized production and export of all agricultural products including rice, with abolishing the procurement and compulsory delivery system for rice in 2003.

In brief, since independence, agriculture sector has not significantly improved, except in the late 1970s and the 1990s. During the socialist period, agricultural production particularly paddy increased due to the Green Revolution effect. In the case, utilization of HYVs, efforts of R&D and extension facilities of Ministry of Agriculture, farmers' active participation and massive collaborative supports and activities of Peasant Association, BSPP and People's Council. During 1990s, the summer paddy programme of 1992/93 and foreign exports for agricultural products except rice since 1987 increased production of paddy and pulses and beans tremendously. During this period, there were no significant technological change and other institutional change. But, in 2003, the government laid down the new rice trade policy. According to this, export of rice was liberalized in 2010. Recently, the government enacted the Cultivable, Fallow and Waste Land Management Law and Agricultural Land Law.

Moreover, Myanmar Agricultural and Rural Development Bank has been raising agricultural credits with low rate of interest and private companies have being implemented contract farming practices. Regarding the marketing institutions, UMFCCI has opened Commodity Exchange Centers to have better supply chain mechanism. The Ministry of Agriculture and Irrigation has implemented the model farms to demonstrate HYVs for rice and disseminate and distribute them to farmers.

In any way, during the study periods, some ineffective and inefficient institutions and non-synchronized institutional changes have still hindered the development of the agriculture sector and its sustainability. On the other hand, weaknesses in supported institutions such as research and development (R&D), education and extension services, irrigation facilities, and technology (farm mechanization) have discouraged the development of the sector.

There are many studies on the development of the agriculture sector and they made important contribution to outstanding agricultural development. However, none of them emphasizes the role of institutions, and institutions for the agriculture sector and the

whole economy. This study, therefore, is an attempt to explore the importance of institutions on agriculture sector development of Myanmar.

The recent agriculture sector of Myanmar is facing some challenges and constraints, insecure land policy and yearly contract of farming, land fragmentation, lack of credits, lack of advanced technology and insufficient farm inputs, etc. To be able to promote the agricultural production by area expansion and yield, farmers need a suitable amount of capital to invest in land, fertilizers, pesticides, and insecticides, and to utilize modern farm implements such as tractor, pump, and tillers. Moreover, farmers need to be motivated to adapt modern technology and education. Thus, for the sustainable development of agriculture sector, sound and favorable institutional environment such as land and marketing policies, and the government's supports to create and promote institutions related such as institutions for credits, research and development, education and extension facilities are essential.

Therefore, it is important that how institutions that create the development of the agriculture sector can be developed; what kind of institutional environment be created; what kind of institutional innovations can broaden opportunities for farmers, especially small scale farmers in value chain.

1.2 Objectives of the Study

The main objectives of the study are to review the institutional changes in the agriculture sector of Myanmar, to assess the impact of institutions on the agriculture sector development of Myanmar and to explore which institutions were crucial for the development of this agriculture sector.

1.3 Method of the Study

This study is undertaken by the descriptive analysis method on institutional changes in the agriculture sector from the colonial period to market-oriented period and also to analyze the institutional impacts on the agriculture sector development in the aspects of sown acreage, yield, production and exports of agricultural products.

1.4 Scope and Limitation of the Study

This study mainly emphasizes on institutions and institutional changes which related and supported to the agriculture sector development in line with the changes of political economy under different periods. Then, it analyses their impacts on the development of this sector especially in sown areas, production and export of agricultural products. The agriculture sector in the study takes into account agriculture sector proper (crop sub-sector). The study period is from colonial period to market-oriented period (1886-2010).

1.5 Organization of the Study

The study comprises five chapters. Chapter 1 is introduction chapter which consists of a brief introduction giving rationale for undertaking the study, objectives of the study, the methodology adopted for the study, scope and limitations and organization of the study. Chapter 2 is literature review on institutions. It sets out the conceptual and theoretical review of institutions, institution building, institutional change, institutions and economic performance, and its impacts on agricultural development. Chapter 3 explores institutions in agriculture sector of Myanmar for four main periods - colonial period, parliamentary democracy period, socialist period and market-oriented period. Chapter 4 analyses the impacts of institutions on the agriculture sector. This part examines the development of the agriculture sector in terms of land utilization and firm size, sown acreage, production and export of selected major agricultural products. Conclusion is expressed in Chapter 5. It brings out findings and suggestions for the agriculture sector development in Myanmar.

Chapter 2

Literature Review

2.1 Conceptual View of Institutions

It is now widely recognized that the availability of physical, technical and financial resources is not a sufficient condition for successful socioeconomic development. The strength and weaknesses of institutions as well as behavioral factors play a significant role in determining the nature and pace of the development process. Studies of rural development in Asia have confirmed that inadequacies in the institutional framework have hindered the effective implementation for rural development program¹.

The word "institution" denotes a variety of meanings depending on the perception of the user and the context in which it is used. An institution is a set of formal and informal rules, including their enforcement arrangements². Institution refers to a wide spectrum of formal and informal human groups, behavioral patterns, social, legal and administrative systems, and established practices in social, political and economic activity that have an important bearing on the success of projects³.

According to North (1990), institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. Again, Ostrom defined as institutions are the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what producers must be followed, what information must or must not be provided⁴.

Institutions are composed of formal rules (state law, common law, regulations), informal constraints (conventions, norms of behavior and self-imposed codes of conduct), and the enforcement characteristics of both⁵.

Kasper and Streit (1998) argued that institutions without sanctions are useless. Only if sanctions apply, will institutions make the actions of individuals more predictable.

¹ Satish, 1987

² Schmolter, 1900

³ McInerney, 1978

⁴ Ostrom, 1990

⁵ North, 1990

Rules with the sanctions channel human actions in reasonably predictable paths, creating a degree of order. If various related rules are consistent with each other, this facilitates the confident cooperation between people, so that they can take advantage of the division of labor and human creativity.

Institutions are defined as man-made rules which constrain possibly arbitrary and opportunistic behavior in human interaction. Institutions are shared in a community and are always enforced by some sort of sanction¹. The definition of institutions includes three parts: the institutions are rules or constraints made by the human; the purpose of institutions is to regulate human interactions in the society, in other words, to protect the opportunistic behavior in human interactions; and enforcement mechanism is functioned by using sanctions.

Institutions are the rules, organizations, and social norms that facilitate coordination of human action². According to Figure 2.1, on the informal end, they go from trust and other forms of social capital (including deeply rooted norms governing social behavior) to informal mechanisms and networks for coordination. On the formal end, they include a country's codified rules and laws, and the procedures and organizations for making, modifying, interpreting, and enforcing the rules and laws (from the legislature to the central bank).

Formal institutions are formalized written rules designed and imposed by political parties with explicit sanctions. Formal institutions include laws and regulations. The enforcement of these rules is executed by political organizations like police, court, and local administrative authorities. North used the terms "formal constraints", which emphasizes on formal rules, written rules and "informal constraints" which are non-formalized rules, unwritten rules³.

Kasper and Streit emphasized on rules designed and enforced by a third party and used the term "external institutions" and also used the term "internal institutions" whereas they referred to rules developed in internalized ways. Enforcement of informal rules relies on the sanction imposed by individual, self-enforcement and on the sanction imposed by the social groups. Moreover, Kasper and Streit categorized internal

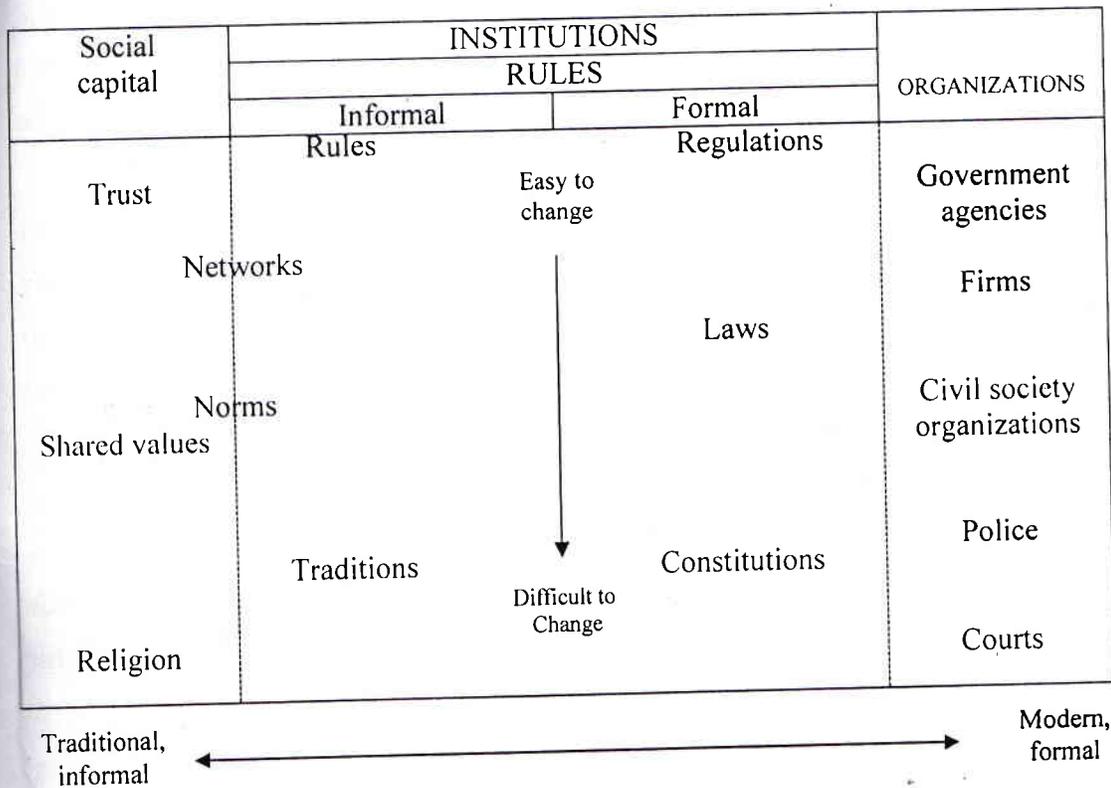
¹ Kasper and Streit, 2001

² World Development Report, 2003

³ North, 1990

institutions into “informal internal institutions” and “formal internal institutions” according to sanctions practiced¹. Informal internal institutions, not sanctioned by formal mechanisms, are conventions, that is, rules that are of obvious,

Figure 2.1
Social norms, rules and organizations for coordinating human behavior



Source: World Development Report 2003, p.38.

Informal internal institutions, not sanctioned by formal mechanisms, are conventions, that is, rules that are of obvious, immediate benefit to the persons whose behavior they control and whose violations harm self-interest; internalized rules whose violations are sanctioned primarily by a bad conscience; and customs and manners which are sanctioned informally by the reactions of others, for example by exclusion. Internal institutions can be formalized, where the sanctions are implemented by an organized manner by some members of society.

¹ Kasper and Streit, 2001

In the modern Western world, people think of life and the economy as being ordered by formal laws and property rights¹. According to his research, he believed that the foundation of capitalism and the Western world development is formal institutions, not informal institutions.

Although North's ideas about institutions, formal rules and informal constraints are quite clear, however, some researches carried out by other scholars in the area like Schultz (1968), Schotter (1981), Sugden (1986), Greif (1989,1994), Hurwicz (1993), Nelson (1994), Bowles (2001) etc., were also very valuable and their findings are significant.

No doubt, Aoki's research provided a good overall picture on comparative institutional analysis among the economists. His own definition of institution as 'an equilibrium of a game' (comparing with 'the rules of the game' from North) was a quite new and important concept, his research methodology and major findings are also fruitful².

In fact, if all these concepts about institutions were compared especially North's ideas with the original institutional theories built up by the founders of the old institutional economics (OIE) like Veblen, Commons etc., some differences can be easily found. For example, in the eyes of Veblen (1899, 1934), economic institutions are merely informal institutions, that is, a mixture of habits and customary actions (Hodgson 1988). According to Peter Burke (1992), this is actually a broad cultural concept covering customs, conventions, attitude of life and people's psychology. From the methodology point view, Veblen's institutions idea is rooted in the evolutionary and social historical foundation. Therefore, the concepts of habits, social interactions of the individuals within the community, human relations etc., play significant importance to his theory of institutional economics.

In Commons' theory of institutions, the simple but very important notion is that 'collective action in control, liberation and expansion of individual action'³. Just like Veblen, Commons also pay more attentions in his institutional economics to informal institutions rather than formal institutions.

¹ North, 1990

² Aoki, 2001

³ Commons, 1934

From the History of Economic Thought point of view, the major ideas from the American OIE School such as the points from Veblen and Commons are very much strongly linked or even rooted to the German History School (GHS) in the middle of 19th century. Because GHS' historical approach was more Darwinian oriented and the School regarded that each society must constitute its own rules based on its history. Thus, GHS rejected the general and abstract assumptions such as the rationality, maximization of humans for economic analysis proposed by British classical economists at the time. Especially, the ideas about the importance of non-economic factors (such as customs, property, legislation, justice, history, ethical, politics etc.) into economic development from Wilhem Roscher and the ideas about social laws from Gustav Schmoller of the GHS School scholars influenced American OIE to a certain extent. Both Veblen and Commons recognized this very clearly in their works¹.

In 19th century, even in philosophy research, an institution at the time denotes more to conventions and costumes, Charles Sanders Peirce's research is one of the examples. From late 20th century, new institutional economics (NIE) becomes more influential in the economics world and the focus of the discussion shifted gradually to formal institutions from informal institutions. However, according to researches, some of the economists are still trying to integrate these two forms together to explaining the real world better through some interdisciplinary approaches. Geoffrey M. Hodgson and Carsten Herrmann-Pillath are the two examples of them.

Some of the scholars look at institutions by linking with social orders. For example, according to Hayek, generally speaking, institutions often refer to the cosmos of the spontaneous order such as customs, practices or cultural beliefs or the norms of the spontaneous order such as norms, self-enforcement contracts and ethics². This means, as Hayek understands it, that the institutions people often refer to are mainly informal institutions, not formal institutions.

Study of Kasper and Streit is another example which carried out research in institutions mainly from the perspectives of social order and public policy³. Since they regard the major function of institutions is to safeguard and improve a stable social order,

¹ Veblen, 1901 and Commons, 1934

² Hayek, 1973

³ Kasper and Streit, 1998

facilitate human interactions and ban unpredictable and opportunistic behaviors, thus sanctions or punitive measures in particular, are especially important to the enforcement of any institutions in their theory: "institutions without sanctions are useless, and only if sanctions apply will institutions make the actions of individuals more predictable"¹. Based on their classifications of institutions into two groups of internal institutions ("as rules that evolve within a group in the light of experience", they also called it "soft institutions") and external institutions ("as rules that are designed externally and imposed on society from above by political action") in terms of the origin of institutions, the ways of sanctions are also different. According to their definition, the major part of the internal institutions is regarded as informal institutions and the sanctions for informal institutions are mainly social sanction based, not organized mechanism based.

In view of the complex nature of institutions which includes "process", "behavioral" and "ideological" aspects, it has been difficult to quantify them or label them appropriately. Traditionally, institutions have been classified as religious, civic, political, economic and social. The efficacy of political institutions, for example, determines the level of maturity and success of macroeconomic management. Similarly, social and economic institutions govern the framework under which development takes place. Basically, these institutions are either formal or informal and deal with legal or customary systems and practices².

The institutional perspective examines the forces that work to shape and implement policies. Institutions must be stable, but they also must be capable of changing and adapting, and new institutions must emerge. Institutions are essential for sustainable and equitable development. When they function well, they enable people to work with each other to plan a future for themselves, their families, and their larger communities. But when they are weak or unjust, the result is mistrust and uncertainty.

Institution or institutional environment must pick up signals about needs and problems – particularly from the fringes; this involves generating information, giving citizens a voice, responding to feedback, and fostering learning. It must also balance interests – by negotiating change and forging agreements, and by avoiding stalemates and

¹ Kasper and Streit, 1998

² Asian Development Review, 1991

conflicts. And it must execute and implement solutions – by credibly following through on agreements.

However, there are barriers to emergence of such an institutional environment. One is dispersed interests. Concentrated interests are often given too much weight, as in the assignment of property rights for land and water, and in the operation of government. A second barrier is the difficulty of forging credible commitments to protect and nurture persons and assets. And a third is institutions that are not inclusive. When societies and processes are unequal and undemocratic, it is more difficult to coordinate dispersed interests and frog credible commitments.

Structural changes, urbanization, the demographic transition, the redistribution of wealth (particularly increments of new wealth), unleash dynamic forces and opportunities for institutional change.

2.2 Institution Building

Institution building has been defined as the “planning, structuring, and guidance of new or reconstituted organizations which (a) embody changes in values, functions and technologies; (b) establish, foster and protect new normative relationships and action patterns; and (c) obtain support and complementarity in the environment”¹.

Institution building, more specifically, is aimed at strengthening capabilities for planning, organizing, implementing, monitoring and evaluating development projects and programs sponsored by public, private or grassroots- level organizations.

Institution building has increasingly become complex because of the lack of any consolidated theory or knowledge relating to organizational structures, organizational design, program planning, budgeting, staff training and personnel and financial management as well as their interdependence and linkages.

Experience over the past two decades confirms that sustainability of development projects has been affected by weak institutions and inadequate management capabilities. There is strong evidence that institutional and managerial problems have had a pervasive impact on project implementation despite continuing efforts by multilateral and bilateral agencies to provide enhanced supports to strengthening institutional capacities in

¹ Milton J. Esman, 1972

developing countries. Governments seeking change have to start with existing institutions that have their own historical inertia and underlying political interests¹. The process of reform, therefore, involves negotiation compromise, accepting "second best solutions" that are politically feasible².

Institutional aspects, in the context of agricultural development, cover broad areas such as land tenure, credit, extension, training, marketing, pricing policy, farmers' organizations, irrigation and management. The complexity of these institutions makes it necessary for proper understanding of not only related technical factors but also the sociocultural and behavioral aspects of communities which are the main targets of development. For instance, an assessment of the success or failure of an agricultural credit component would be incomplete if it did not include an examination, among other things, of the sociocultural attitudes of communities towards debt repayment and their perception of the role of lending agencies. Similarly, the size and tenure of land determine the ability of water users to pay for water and maintenance of irrigation structures.

2.3 Institutional Change

According to North, major role of institutions in a society is to reduce uncertainty by establishing a stable structure to human interactions. Institutions are creation of human beings. They evolve and are altered by human beings. Changes in relative prices create incentives to construct more efficient institutions. Institutions determine the opportunities in society. Organizations are created to take advantage of those opportunities, and, as the organizations evolve they alter the institutions.

Institutions, organizations, and their interactions shape the direction of institutional change. Institutional change is a complicated process because the changes at the margin can be a consequence of changes in rules, in informal constraints, and in kinds and effectiveness of enforcement. Moreover, institutions typically change incrementally rather than in discontinuously fashions.

¹ Asian Development Review, 1991

² World Development Report, 1983

Although formal rules may change overnight as a result of political or judicial decisions, informal constraints embodied in custom, traditions, and codes of conduct are much more impervious to deliberate policies. Institutions were and are always a mixed bag of those that induce productivity increase and those that reduce productivity. Institutional change almost always creates opportunities for both type of activity.

According to the U.S economic history in the 19th century, the basic institutional framework that had evolved by the beginning of that century broadly induced the development of economic and political organizations (Congress, local political bodies, family farms, merchant houses, and shipping firms), whose maximizing activities resulted in increased productivity and economic growth both directly and indirectly by an induced demand for educational investment. The educational investment resulted not only in the free public education system, but in agricultural experiment stations to improve agricultural productivity; the Morrill Act created the land grant public universities¹.

2.4 Institutions and Economic Performance

The opportunities for political and economic entrepreneurs are still a mixed bag, but they overwhelmingly favor activities that promote redistributive rather than productive activity, that create monopolies rather than competitive conditions, and that restrict opportunities rather than expand them².

Institutions affect the performance of the economy by their effect on the costs of exchange and production. Together with the technology employed, they determine the transaction and transformation (production) costs that make up total costs.

The institutions have been taken place as a mobilized production factor for the explanation of the economic growth since mid-1970s in addition to capital, labor, technology, education and skill acquisition, natural resources, and structural change³. The general presumption is that – institutions have a greater impact on how well people attain their economic and other objectives and people normally prefer institutions which enhance their freedom of choice and economic wellbeing.

¹ North, 1990

² Ibid

³ Kasper and Streit, 1998

The impact of institutions and their changes on economic growth may be different between developed and developing countries. Negative or positive impact can be influenced by path dependency, development and effectiveness of institutions and their players, rigidity of attitude and behavior, responsiveness of citizens and society, and right pacing and momentum of changes.

Stable political structures, well-specified and enforced property rights, and low cost enforcement of contracts have resulted in the low transaction costs underlying the success of the developed economies.

The central message of the New Institutional Economics is that institutions matter for economics. The concepts and hypotheses of relevant modern institutional economics are: (1) Methodological individualism (2) The maximand (3) Individual rationality (4) Opportunistic behavior (5) economic society (6) Governance structure (7) Institutions and (8) Organizations¹.

The New Institutional Economics (new theory of Organization) is associated with the work of Armen Alchian, Ronald Coase, Douglass North, Oliver Williamson, and others. Modern institutional economics included the subfields such as (1) Transaction-cost economics (2) Property-rights analysis (3) Economic theory of contracts (4) The new institutional approach to economic history (5) The new institutional approach to political economics and (6) Constitutional economics².

1. *Transaction-cost economics*: Transaction costs arise in connection with the exchange process, and their magnitude affects the ways in which economic activity is organized and carried out. Included within the general category of transaction costs are search and information costs, bargaining and decision costs, and policing and enforcement costs. Transaction-cost economics is concerned particularly with the effect such costs have on the formation of contracts.

2. *Property-rights analysis*: The system of property rights in an economic system defines the positions of individuals with respect to the utilization of scarce resources. Since the allocation of property rights influences incentives and human behavior in ways

¹ Furubotn and Richter, 1997

² Ibid

that are generally predictable, a basis exists for studying the impact of property-rights arrangements on economic outcomes.

3. *Economic theory of contracts*: As a “relative” of both transaction-cost economics and property-rights analysis, contract theory deals with incentive and asymmetric information problems. The latter fall into two distinct categories. There can be asymmetric information between the parties to a contract and asymmetric information between the contractual parties on one side and a third party (e.g., the court) on the other. Accordingly, this can be distinguished between two variant types of contract theories.

(a) *Agency theory* deals with problems of asymmetric information between contractual parties. The asymmetric information in question can exist either before or after a transaction has taken place. The theoretical approach adopted in these cases may rely largely on verbal analysis or on the use of formal models.

(b) *Relational and incomplete contract theory* focuses on informational asymmetries that can arise between the parties to a (usually longer-term) contract on one side and a third party on the other. An important objective of such contracts is to overcome the post contractual opportunism that may result from the difficulties courts or other third parties face in verifying the execution of contractual obligations. Credible commitments and self-enforcing commitments are important topics in this field.

4. *The new institutional approach to economic history*: The work of economic historians following this methodological line is concerned with the application and extension of concepts such as transaction costs, property rights, and contractual relationships to historical experience. One important objective is to establish a theory of the institutional structure of society as a whole. As would be expected, writers in this field are especially concerned with making institutions endogenous variables within a general economic model.

5. *The new institutional approach to political economics*: In recent years, the **New Institutional Economics** movement has given impetus to the development of the so-called New Economics of Organization (NEO). This approach, pioneered by Williamson and drawing on ideas developed independently by North, has been applied in various fields of political science. In general, it can be said that the close relationship between the political and economic sides of social systems, which has been the basic object of study

for political economy, is now viewed from the perspective of transaction costs and their effects on property rights and contractual arrangements. These observations provide a link to constitutional economics.

6. *Constitutional economics*: Buchanan (1987, p.585) describes this field as one that attempts “to explain the working properties of alternative sets of legal institutional-constitutional rules that constrain the choices in activities of political and economic agents.” Moreover, since these “rules” can be interpreted as formal or informal social devices that constrain behavior, procedures for making selections among alternative constraints must be examined along with the constraints themselves. In particular, interest attached to the study of how society chooses the rules for making the rules under which the system operates (“public choice”).

Knight (1921) focused on the role of entrepreneur in attempting to reduce uncertainty, and Coase (1937) introduced the concept of transaction costs, which began to make sense of the existence of the firm. The kinds of information and knowledge required by an entrepreneur are in good part a consequence of a particular institutional context.

North’s theory of institutions is constructed from a theory of human behavior combined with a theory of the costs of transacting. The costliness of information is the key to the costs of transacting, which consist of the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements. These measurement and enforcement costs are the sources of social, political, and economic institutions¹. The costliness of economic exchange distinguishes the transaction costs approach from the traditional theory that economists have inherited from Adam Smith².

In his writing (North 1990), it takes resources to define and protect property rights and to enforce agreements. Institutions together with the technology employed determine those transaction costs. It takes resources to transform inputs of land, labor, and capital into the output of goods and services and that transformation is a function not only of the

¹ North, 1990

² Ibid

technology employed, but of institutions as well. Therefore, institutions play a key role in the costs of production.

A hierarchy of rules- constitutional, statute law, common law (and even bylaws) - together will define the formal structure of rights in a specific exchange. Moreover, a contract will be written with enforcement characteristic of exchange in mind. Because of the costliness of measurement, most contracts will be incomplete; hence informal constraints will play a major role in the actual agreement¹.

The rights are both legal rights defining what one can do with the property and rights over the physical attributes of the property. Institutions determine how costly it is to make the exchange². Institutions in the aggregate define and determine the size of the discount, and the transaction costs that the buyer and seller incur reflect the institutional framework. Transaction costs of the transfer are partly market costs- such as legal fees, title insurance, and credit rating searches- and partly the costs of time each party must devote to gathering information, to searching, and so forth.

The incentives that are built into the institutional framework play the decisive role in shaping the kinds of skills and knowledge that pay off. The institutional framework will shape the direction of the acquisition of knowledge and skills and that direction will be the decisive factor for the long-run development of that society³.

The development of an incentive structure through patent laws, trade secret laws, and other laws raised the rate of return on innovation and led to the development of the invention industry. Better institutions and better protection of property rights increase investment and foster technological progress, thereby raising income levels⁴. Effective institutional changes induce investment, productivity and economic development.

Higher national income can contribute to better institutional quality (for example, through more expenditure on courts). But more importantly, better institutional quality can also contribute to higher national income, as when good institutions facilitate investment or curb over fishing. A large body of theoretical and empirical studies concludes that there are strong causal effects from good institutions, measured by such

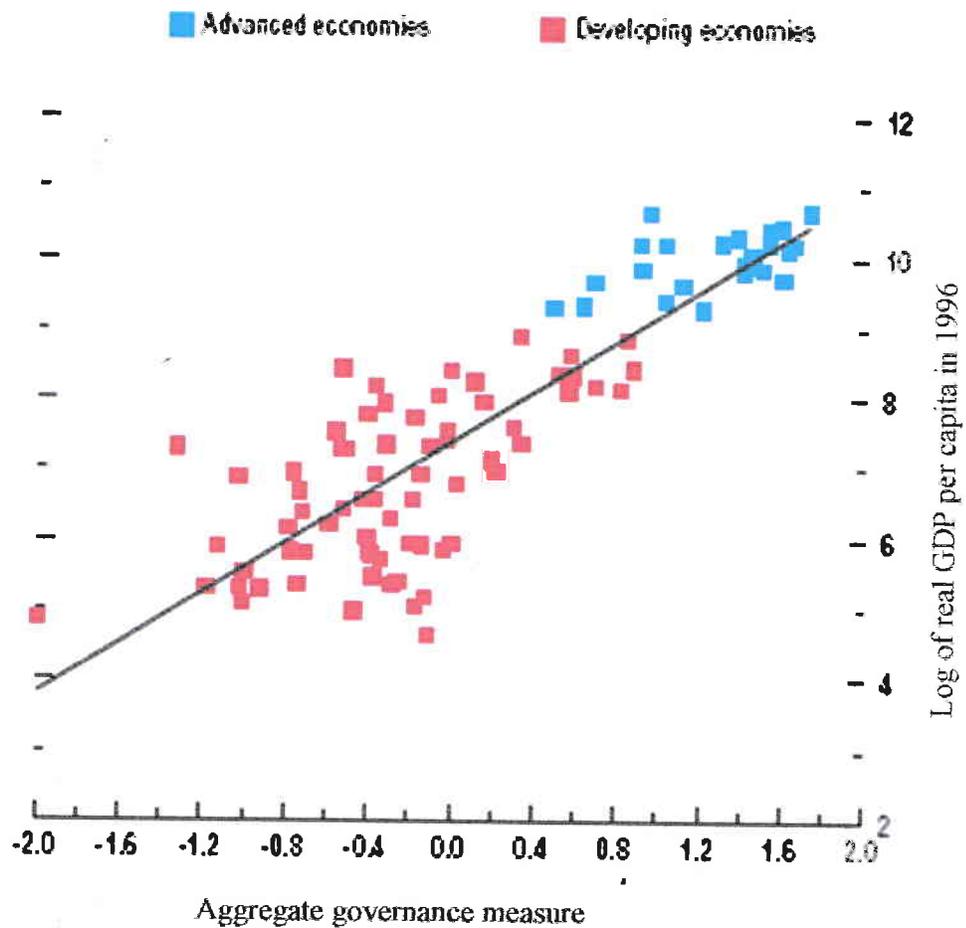
¹ North, 1990

² Ibid

³ Ibid

⁴ Rodrik 2003

Figure 2.2 Relationship between Incomes and Institutions



Source: World Development Report 2003.

variables as rule of law to higher income per capita (Figure 2.2). According to studies¹, better voice and accountability would raise national income per capita by a factor of 2.5. Another study suggests that per capita income would grow at least 2 per cent per year in all countries if they would only protect property rights (public and private) and pursue more competitive market policies².

¹ World Development Report, 2003

² Ibid, 2003

2.5 Institutions and Agricultural Development

Institutions play a significant role in agricultural development. Institutions in the agricultural sector in most of the countries were shaped historically to minimize varieties of uncertainties, reduce the problems that are intrinsic to the sector and finally forge the development of the sector.

Therefore, these forms play a vital role in analysis of the agriculture. Interestingly, in recent years institutional analysis has gained substantial importance with the recognition of property rights and transaction cost schools of thoughts. With the advancement of theories on these lines, the institutional approach started gaining importance in understanding the development process.

In many countries, agricultural institutions have a long history, starting from the traditional form of shifting cultivation to modern capital-intensive agriculture. This also poses certain questions on the factors that have compelled such changes and transformation. Organization of a systematic framework therefore, requires grouping these in four basic forms namely institutions associated with inputs, production, exchange, and social system. Composition of inputs in agriculture has undergone drastic changes over a period of time.

In recent years, agricultural inputs have substantially increased from land, labor to various forms of seeds (HYV and GM), fertilizer, pesticides, insecticides, various instruments like tractors etc., and consequently the role of institutions has changed. Institutions associated with production help to enhance the productivity of the system with the improvement in technology and reduce uncertainties associated with the production system. Exchange as an integral form of market institution has undergone changes in various forms. Hence, institutional development is crucial for agricultural development to contribute to poverty reduction and overall economic growth¹. Agricultural development can be viewed as a process of economic growth, which is based on (i) improvements in productivity through technological change and (ii) increased specialization and re-organization of activities by individual laborers, farmers, input suppliers, traders and other actors, all working to improve their livelihoods.

¹ Meijerink & Roza, 2007

The factors that prevent people, either individually or in groups, from securing this goal include constraints with respect to natural resources, technology, infrastructure, policies and governance. Recent thinking about these processes, however, increasingly highlights the pivotal role that institutions and institutional change play in stimulating and supporting market-driven development by creating a basis for enabling market conditions.

But, it is important that how can institutions that create enabling market conditions be developed. First of all, an important message is that our understanding of markets and market institutions is relatively modest, compared to the ambitions of interventions to promote equitable and sustainable agricultural development. Enabling market conditions involve issues of institutional change, and lowering transaction costs that are related to gathering information about products, prices, trading partners, contracting, monitoring and enforcing agreements at least as much as they are matters of technological progress, or reducing the costs of production.

As a complex combination of organizational forms, formal rules, and informal norms and beliefs, institutions condition the choices and incentives that people face. And development implies changes to this economic environment, thereby increasing opportunities, particularly for the less advantaged.

Institutions are the main determinants of agricultural development. Even though, other factors, such as infrastructure and technology can help to reduce costs, including transaction costs. However the development of technology or decision to improve infrastructure is embedded within institutions and social systems in general. Institutions condition these processes and an understanding of this relationship is necessary for stimulating technological change. In the first instance, this requires more analytical insights into the functioning of institutions. It should be emphasized though that more is understood about how the failure of institutions to adapt in certain directions constrains people in their attempts to improve their livelihoods. Unfortunately, much less is known about how to steer or stimulate institutional change in certain directions.

There are two types of purposes that institutions fulfill in economic terms: promoting exchange and protecting property and persons¹. The two principal categories

¹ Shirley, 2005

of institutions are: institutional environment (including informal rules and formal rules), and institutional arrangements (governance structures and organizations) can be considered in terms of the role they play in either promoting exchange or protecting property.

Institutional analysis goes beyond "good governance" with the associated implication that these are questions simply of political will, and examines the mechanisms that underlie various processes, leading to either successful outcomes (e.g. economic development, reducing poverty and inequality), or to stagnation or even deterioration.

Markets in rural areas, particularly agricultural markets, suffer especially from problems of information, inadequate competition, and weak enforcement of contracts. Building institutions that reduce transaction costs for farmers can greatly improve the way agricultural markets operate. This is especially important for poverty reduction, because poor people are more likely to live in rural areas and make their living from agriculture-related activities. Well-functioning agricultural markets also have important benefits for the rest of the economy. As agricultural productivity improves, farmers leave agriculture for more productive employment in industry and service, promoting overall growth.

Three particular challenges face policy makers building institutions for agricultural markets. First, agricultural activity is usually geographically dispersed and distant from major urban cities. A problem in providing rural credit is that formal providers of credit, such as banks, may find it costly to obtain information on geographically scattered small farmers. Similarly, costs for judicial services and the marketing of produce can be high because of the distance between farmers and major towns. In all such cases, informal institutions serve as substitutes for formal institutions – effectively in some environments, but as incomplete surrogates in others.

Second, farming in many countries has historically suffered from urban bias in public policy. Those countries' systems subsidized urban consumers of food by requiring farmers to sell their output at less than the market price. Other urban biases include overvalued exchange rates to make imports cheaper for urban consumers, excessive agricultural export taxes, and high effective rates of protection for domestic industries

that provide agricultural inputs. Lower public investment in infrastructure, education and other services in rural areas increases transaction costs in marketing which can be a major institutional constraint to developing agricultural productivity. Public or private efforts to build specific institutions that ease information costs, such as grades and standards or market information systems, can help to boost agricultural development. Moreover, the relative lack of education of farmers can make some useful formal institutions, such as institutions for disseminating technological information, harder to access.

Third, agriculture is heavily dependent on the climate change. Poor farmers often rely on their own savings and the help of family and friends when floods or droughts strike. But, these insurance mechanisms are of little use. Wealthier farmers and those in richer countries can purchase forms of disaster insurance and benefit from public subsidies. These subsidies are costly for poorer economies, and markets for disaster insurance require an array of complementary institutions unavailable in most developing countries.

Thus, it is needed that governments or communities can build effective institutions to raise farmers' returns and lower their risk. The interlinked institutions governing farmers' physical and financial assets- those for land and for finance – are particularly important. Secure and transferable rights to land stimulate income-generating investment and reduce uncertainties about future incomes. So do well-functioning rural financial institutions, which provide credit for both income-enhancing and risk-reducing investments and insurance. Institutions for generating and disseminating agricultural technology directly affect the yields and risk inherent in agricultural production.

In many countries, marketing problems are the biggest institutional constraints to increasing agricultural productivity. Connecting small, isolated communities into larger markets, and particularly into global markets, stimulates demand for farmers' output. This, in turn, generates demand for inputs. The more open the market, the greater is the demand for effective formal institutions for farmers – from documented property rights in land to better access to credit. Informal institutions and simplified procedures may be appropriate in situations where complementary formal institutions are absent or where the overall demand for agricultural output is low. Formal institutions may be more

appropriate in situations where high demand for land give rise to disputes over land and informal institutions can no longer resolve these disputes satisfactorily.

Innovation, often through experimentation, can identify techniques that overcome the inherent high transaction costs in rural areas. These can range from simple databases that permit technological information sharing among small farmers to improved enforcement mechanism inherent in group-based lending.

As population grew, land in many parts of the world specifically agricultural land became scarcer, and more important as a productive asset. The nature of private rights in agricultural land varies widely across countries. Both governments and communities have built institutions to define these rights.

Secure and transferable land rights can be provided by both informal and formal institutions. Such systems must provide information on who owns the land, who has a secured interest in the land, where land transactions are registered, and how to access this information. In many cases, establishing formal titling is an unnecessary cost in the medium term. But, formal property rights systems enforced by the State are needed to reduce land disputes where population growth or demand for agricultural produce leads to competitive pressures on land or where transactions with those outside the community are common.

Improved security of tenure can raise the expected returns from investment and ease credit constraints. This in turn can raise investment levels and productivity. Secure tenure to land helps assure investors that the returns to their investment will not be expropriated by government or private agents. Better land tenure also increases access to credit, since land can be used as collateral. If land tenure is secure, a functioning land market that allows transfer of property from owner to another can help raise productivity by transferring land from less efficient cultivators to more efficient ones. This overall productivity gain is greater, if there are functioning credit markets. Otherwise, the more efficient farmers would not be able to raise the capital needed for the purchase. Productivity increases also depend on sellers being able to engage in other income-generating activity.

In many developing countries extensive regulation of land market transactions has meant that land markets seldom operate freely. Since transparency tends to be low and administrative capacity limited, these regulations also encourage corruption.

Formal land titles can increase access to credit and raise investment in land. But, these functions greatly depend on the broader institutional environment. Governments should embark on large scale titling programmes only where competitive pressures and potential disputes mean that community land tenure arrangements are ineffective. Formal land titles create secure and transferable property rights by providing better information. Informal land right systems are based on knowledge of community members and neighbors. Property owners may clearly demand the establishment of formal titling systems when informal systems become less effective.

Formal land market institutions include land registries, titling services, and land mapping. In building these institutions, three characteristics should be kept in mind: clear definition and sound administration of property rights; simple mechanisms for identifying and transferring property rights; and thorough compilation of land titles and free access to this information.

Over time, formal credit provision has increased in rural areas. Increasing prosperity among farmers; better rural infrastructure; integration of the urban and rural financial systems; and the development of complementary institutions such as formal credit histories or collateral systems for rural borrowers, which lower the costs of lending, have all contributed to this increased access to formal credit.

In many developing countries, effective and accessible formal rural financial institutions are still rare - largely because of the lack of complementary institutions. As a result, informal financial institutions still dominate in most poorer countries and for poorer farmers. Besides access to credit, safe and liquid saving installments are vital for farmers' well-being. In the absence of loans, savings are the only resource for investment. Savings institutions in rural societies are still informal, and savings are often not in financial assets.

Technological innovations can also help credit provision. First, the continuing extension of credit-rating services to rural areas brings the promise of eventual

integration of urban-rural banking. Second, information technology can reduce transaction costs for both state and private actors.

When complex agricultural marketing arrangements in developing countries fail, it is usually because of the lack of effective supporting institutions. The state has a role to play in building better marketing institutions, but not through state marketing bodies. Instead, the state can facilitate private marketing institutions, such as contract farming and cooperatives. Whatever the organization of marketing, purchasers can still incur high costs to verify the quality of goods they buy. Two institutions have evolved to meet these needs: grades and standards provide a greater level of certainty about the quality of produce, and market information systems provide information to farmers. This evaluation system can significantly reduce information costs by allowing traders to contract "remotely" through commodity specification rather than on-site visual inspection.

Marketing information systems (MIS) generally describe dissemination networks of public data that provide information on agricultural markets. For farmers, knowledge of market information can help them to plan their production, harvesting, and sales according to market demand. MIS are of special use to smaller farmers who lack the scale economies to gather such information on their own account.

By thinking more analytically and precisely about the various elements of institutions, it should be possible to improve the effectiveness of interventions to induce change, such as those supported by development agencies. On one level, this involves improving our understanding of how changes in organizations and formal rules depend on the wider institutional environment of norms, beliefs, traditions, etc. in which they are embedded. On another, more challenging level, the question is how changes in informal institutions can actually be stimulated.

In terms of agricultural development, this means asking what kinds of institutional innovations can broaden opportunities for farmers, particularly smallholder farmers, in value chains. And it is necessary that how can innovations in terms of institutional arrangements, such as cooperatives and forms of contracting, be designed and adapted to account for the wider institutional environment, thus increasing their chances of success. Unraveling these issues is at the heart of understanding why agricultural development does or does not take place in certain places. Without a better understanding of how

market exchange in its various forms works, it is difficult to give much concrete meaning to the goal of improving market access for smallholder farmers, or making markets work well.

2.6 Experiences of Selected ASEAN Countries

Thailand

Agriculture is one of the main productive sectors in the Thailand economy. During its development, agriculture accounted for a large share in GDP. However, the agriculture's contribution to GDP has declined gradually, since industrialization has developed¹. Within the agriculture sector, crops have dominated during 40 years of development by accounting for about 60-70% of agricultural GDP. The main crops were paddy, cassava, rubber, maize and sugarcane, but their contribution have declined overtime. The new crops such as vegetables and flowers have increased². On the other hand, as development proceeded, Thailand evolved as one of the largest food exporters.

Much of the impressive economic growth recorded by Thailand in the 1970s and early 1980s was owed to the steady expansion of the agriculture sector. This sector provided adequate food for the rapid growing population and produced substantial surpluses of some commodities for export such as rice, rubber.

Thailand's agricultural growth and income distribution are affected by its agrarian structure and available land resources. Recently, agricultural land extends about a half of total land area and an average farm size was about 25 rais³ and most of the farmland is ownership of private individuals and farmers.

The Thai farmers' ability to adapt to changing market conditions contributed to the country's agricultural success, but even more important was the availability of large areas of virgin land for cultivation.

¹ Agriculture contributed about one fourth of GDP in 1970s and 1980s and it was about one tenth of GDP in 2000s. Rapid growth in food industry such as canned fruits and vegetables now constitutes nearly one third of manufacturing sector.

² During Thailand's "first wave" of diversification in 1960s and 1970s, besides rice and rubber, farmers expanded production of upland field crops, mostly cassava, kenaf, maize, and sugar, and also mung beans and sorghum. The second wave of diversification in the late 1970s has been marked by a shift into fruits, vegetables, oilseeds, tree crops.

³ 1 rai = 0.16 hectares; 1 hectare = 6.25 rais

In Thailand, traditionally, the King owned all the land, from which he made grants to nobles, officials, and other free subjects. If left uncultivated for three years, the land could be taken back by the crown, but otherwise it could be passed on to heirs or mortgaged or sold. At the same time, there was abundant unoccupied cultivable land that by tradition and custom could be cleared and used by a farmer, who after three years of continuous cultivation established informal rights.

The concept of individual ownership of the land was introduced during the reign of King Chulalongkorn (Rama V, 1868-1910). Land reform was constituted by the King in 1872, and beginning in 1901 formal title (land titles system) could be acquired. Idea of land reforms was first started in 1933 to buy all of excess land from the rich people and government officers to make it suitable for the agriculture, develop it for crop production and hire the farmers to put it to more productive use. However, it was not implemented and there was landholding problem with regard to land distribution and its use.

The 1954 code established eight hectares as the maximum permissible holding except where the owner could manage a larger holding by himself. This limitation was generally ignored, however, and was rescinded four years later. A title deed giving unrestricted ownership rights ordinarily was issued only after a cadastral survey. The testimonial of land ownership for a landowner gave him the right to occupy the land permanently and to pass the property on to heirs; in effect it was an assurance that a title deed eventually would be forthcoming. Transferring the land through sale, however, was extremely difficult, and the exploitation testimonial was not usually accepted by banks as collateral. In the case of squatters, a special occupancy permit could also be obtained, unless the land was in a permanent reserved forest or was intended for public use. Satisfactory development could then lead to the issuance of an exploitation testimonial and ultimately a full title deed.

Issuance of title deeds quickened somewhat during the last 1950s. By 1960 the total number of title deeds for agriculture land had reached 1 million, although there were 3.4 million agricultural households. In the 1980s, a substantial component of the nation's dominant smallholder group lacked full title to the land it worked. By 1982, the total number of title deeds was 3.9 million. The lack of full title by the remaining about 40% created not only a sense of insecurity for the landholder but also presented a barrier to

securing needed credit. The titling of land in the mid-1980s was based on a land code promulgated in 1954.

Regarding the tenancy, historically, agriculture tenancy nationwide appeared to have been low except in the commercial rice-growing areas of central plain and in the north. This situation was the result of land reform beginning in 1874 and the great availability of free land, the absence of population pressures, and the relatively small amount of funds required by the individual farmer to start cultivating rice. Together with customary practices that tended to limit the amount of cultivated land that could be claimed, these factors resulted in national pattern of small independent farms.

Of great significance to this development was the law that the farmer had to cultivate his own land; if it was more than he or his family could handle, the farmer had to supervise cultivation of excess. Four hectares were considered the maximum tillable by one family. Although with hired help to about eight hectares could be managed, the amount varying with soil differences and climatic conditions. Large holding did exist as grants to nobles and officials under the Sakdi na system.

The King's reforms played an important part in the breakup of at least some large estates. In such cases, the law provided that the uncultivated land would revert to the state after a period of three years. In the area around capital, however, where many large holdings were located, land could be rented out, and the landholdings therefore remained intact. In some areas, a large number of farmers were deeply in debt and rates of full tenancy for the country as a whole were 6.6% in 1950. In 1950, a Land Rent-control Act covering part of the central plain was passed but proved generally ineffective.

The development of Thai agriculture in the mid-19th century was mainly due to expansion of the agricultural frontier rather than increasing productivity. Up to the 1950s, the swamps were drained for rice production, and then maize, cassava, jute and sugar production moved into felled forestland. In the process, 20 million hectares (ha) of forests were cleared over 150 years. The central government's role in the countryside was limited until the 1950s. Rural society was fairly egalitarian, and most farmers owned their land.

From the late 1950s, the government sought to finance industrial growth through driving expanded agricultural exports. A mixture of public and private policy initiatives

was used. The government invested in roads, agricultural research and institutional credit, promoted agribusiness, and increased government administration in the villages. Few of the profits from crop exports were returned to the countryside.

Associated with tenancy was the equally serious problem of landless farmers. In 1975, the civilian government enacted the Agricultural Land Reform Act of 1975. The legislation called for the establishment of the Agricultural Land Reform Office in the Ministry of Agriculture and Cooperatives to serve as the implementing agency. Under the act, landless and tenant farmers could be allocated up to eight hectares of land that would be paid for on a long-term installment basis. The land to be allocated was to come from purchases from private holders and from forest and crown lands¹. Individual landowners were required to make available to the program all, but eight hectares of their holding.

Under certain circumstances, larger holdings could be expropriated later, if the provisions of the exception were not met. Payment for the private land taken was to be 25% in cash and the remainder in government bonds. In 1976, the land reform programme covered 1.6 million hectares and by the early 1979, almost eighty areas throughout the country had been designated land reform areas under the programme. Although tenancy remained a major issue, the full tenancy rate reduced to be 12%, and tenancy in the central area was still high.

The agrarian institutional reforms in Thailand have been the central objective of the enactment of the National Economic and Social Development Plans (NESDP) since 1960s.

Irrigation facilities were emphasized in the First Plan of NESDP (1961-66) through the construction and improvement of the agricultural water distribution systems such as dams, reservoirs and irrigation canals to expand the irrigated area sufficient for agriculture. The growth rate of agricultural sector during the plan was about 5 %. In the Second Plan (1967-71) of NESDP, for the acceleration of agricultural production as well as improving the economic and social conditions of the rural people, new large scale irrigation projects were constructed. Significant amounts of resources were spent on the

¹ In order to support government's efforts, the King joined hands and surrendered his own private land of 44 million rais in five provinces of the central part of Thailand.

improvement of rice varieties and other crops. As a result, the agriculture sector grew at 4.1% per annum.

During the Third Plan (1972-76), the agriculture sector growth was only at 3.9%, with the government accelerating the development of irrigation projects. The government's policies and programmes were directed towards the promotion of export of agricultural products. Simultaneously, the government passed the Agricultural Land Rent Control Act of 1974, providing for six years, indefinitely renewable rental contracts in 1974. According to the act, rents were to be payable once a year only, and procedures for determining the amount were specified. Moreover, if a poor harvest occurred, the rent was to be reduced, and none would be paid if the harvest was less than one-third of normal.

The policy emphasis was on land ownership through the land reform, during the Fourth Plan (1977-81). Sustainable development, especially balancing resource stock and use and environmental considerations, was discussed since the period of this plan. Although tenancy remained a major issue, the full tenancy rate reduced to 12%, but tenancy in the central area was still high. Since 1980s, the government plan was directed at the development and improvement of small and medium water source and acceleration of the development of watershed.

Since the First Plan, the varietal research, agricultural extension and experiment works by agricultural center were undertaken for lasting increases in agricultural production. Significant amounts of resources were spent on the improvement of rice varieties and other crops during the Second Plan of NESDP. The development of rice variety in Thailand had started in the 1960s through the collaboration of the Thai government and the international Rice Research Institute (IRRI). In 1969, the first high-yielding varieties were developed in Thailand and the new varieties were released to farmers in the 1970s. The dissemination of new varieties in the 1970s contributed to the yield increase in the 1980s, since the average yield of dry season crops was twice that of rainy season crop. Because of yield improvement policy, yields of the main crops such as rice, maize, rubber and sugarcane increased rapidly since 1980s.

The agricultural research system in Thailand is dominated by government agencies under the Ministry of Agriculture and Cooperatives (MOAC),

mainly funded from the annual government budget. The MOAC also plays a dominant role in the dissemination of research results. Altogether, the MOAC accounts for around 95% of the total government budget for all agricultural research and extension (R&E). More than half of the MOAC's R&E budget is allocated to crops and the availability of data relating to this form of research far exceeds that available for livestock, forestry or fishery.

Before the 1960s, public R&E programs concentrated on rice, particularly irrigated rice. Since the 1960s, there has been some diversification of R&E from rice to other crops, particularly rubber and field crops such as corn, sorghum and cotton¹.

Foreign research plays an important role in transferring technology and knowledge to research agencies in Thailand. In the early 1960s, collaborative research was initiated between Thailand and the International Rice Research Institute (IRRI) which was established in 1960 and was later included under the umbrella of the Consultative Group on International Agricultural Research (CGIAR)². The CGIAR, established in 1971, now sponsors 15 international research centers and works in collaboration with national agricultural research agencies in many countries. The flows of agricultural technology between developed and developing countries through international agricultural research, notably the CGIAR, increased markedly after 1960 but began to decline from the early 1990s³.

The most prominent example of technology transfer to Thai agriculture has been in irrigated rice varieties developed by IRRI. The first IRRI scientist assigned to Thailand, from 1966 to 1982, brought a large collection of IRRI rice genetic materials, which were crossed with Thai varieties yielding the first non-glutinous high-yielding varieties that were then released to Thai farmers.

Thailand's agricultural sector is likely to face difficulties over the next five years because financial support for research and development for the sector is low compared with rival countries in the region. Without appropriate investment in agricultural research and development, the country's agricultural sector, and rice in particular, would potentially be overtaken by competitors such as Vietnam in the next five years.

¹ Poapongsakorn et al., 1995

² Isarangkura, 1986

³ Pray and Fuglie, 2001

The country's R&D budget remains at only 0.26% to 0.28% of GDP. According to statistics from the Budget Bureau, the budgeting plan for supporting science, technology, research and innovation of Thailand amounted to baht 11.51 billion in fiscal year 2008. The Agriculture Ministry rather than private food companies remains the largest performer of agricultural research, with a research budget worth 1.617 billion in fiscal 2008, mostly for research crops, livestock, forestry, and fisheries. Public universities also have significant programmes in agricultural research, funded through the Education Ministry and through grants from the Thailand Research Fund and the National Research Council.

In addition to public research, agricultural research policy in Thailand has explicitly sought to encourage private investment in agricultural research and technology transfer by focusing public resources on activities to complement, rather than compete with, the private sector. This is evident in the seed sector, where the public sector maintains a large seed capacity but avoids markets where private seed companies are active.

Traditionally, Thai farmers used simple tools, animal drawn implements and water wheels. Mechanization with power technology began in 1891 when the government imported steam power tractors and rotary hoes that were found to be unsuitable for paddy conditions and also quite expensive. In the early 1920s, agricultural machines were imported for trial operations; the research and development in agricultural mechanization started but did not progress much due to lack of well trained local personnel and the onset of World War II. In the early 1950s, four-wheeled tractors from China and two-wheel tractors from Japan were utilized and promoted as contracting services use by the government but the project was unsuccessful. These stimulate local workshops to simplify the design of imported tractors to reduce cost and also make them suitable for local conditions.

Since 1970s, rice threshers, rice transplanters, reapers had been introduced in agriculture and Agricultural Engineering Division (AED) modified own designs. Rice combine harvesters and mechanical dryers have been popularly used in the late 1980s. Moreover, the cyclonic rice husk burners were introduced in 1990s. Presently, cyclonic rice husk burners have become popular especially by the rice milling plants.

Development of farm mechanization of the country started with power intensive machines such as irrigation pumps, power tillers and threshers. Most farm machinery used is locally manufactured, except some sophisticated machines which are imported¹.

Since the fourth NESDP, the expansions of other economic sectors of the country (industrial, construction, tourism and services) have greatly increased. These draw out a magnitude of labor force from the agriculture sector and have created an on-farm labor shortage crisis. Mechanization has therefore become an important input for Thailand's agricultural production system. Mechanization in Thailand is rapidly expanding with both increases in number and size of machinery in use².

Mechanization initially started from the Central plain and expanded to other regions. Mechanization is not only sprawling but its pattern is also changing. In the central plain, mechanization has been moving from power intensive to control intensive machines. The population of power tillers, irrigation pumps and power threshers in the central plain has become almost stable, but the number of rice combine harvesters has been increasing rapidly. In other regions, the number of power tillers is increasing rapidly. Thai-made rice combine harvesters are being adopted to harvest rice in these regions. Mechanical dryers have begun playing an important role to keep and improve rice quality³.

The Bank for Agriculture and Agricultural Cooperatives (BAAC) is the main source of financing farm machinery purchases by farmers. Rising wages in the Thai economy have sharply increased the demand for labor-saving farm machinery. A first wave of farm mechanization occurred in the 1970s and 1980s, with the diffusion of mechanized land cultivation and rice threshing. Power-tillers, or two-wheeled walking tractors, were introduced in rice production. Larger, four-wheeled riding tractors were widely adopted to facilitate the rapid expansion of land planted with non-rice crops, especially cassava and sugarcane.

In the late 1980s and 1990s, a second wave of mechanization affected crop harvesting. However, the role of the private sector in machinery development is limited

¹ Kaitiwatt, 1996

² Mongkoltanatas, 1998

³ Chaisattapong, 1997

to minor modifications to design and manufacturing processes. Major design improvements originate mainly from imported machinery and the public sector

As agricultural credit, the BAAC was established in 1966 and effectively operated in 1967 to provide credit to farmers and agricultural cooperatives. During 1960s, farmer's institutions such as BAAC were mobilized to provide agricultural loans to the poor farmers. For export promotion of agricultural products, the government planned to channel to more credit to agricultural cooperatives particularly short-term to individual farmers and farmer institutions. During the Sixth Plan (1987-1991), agricultural growth rate slightly increased to 3.4%. In 1964, the Ministry of Agriculture and Cooperatives lent groups of farmers' working capital to buy fertilizer. Moreover, the rice harvest collateral credit policy began in 1984, but it did not come into effect until 1986. It attempted to provide financial liquidity to farmers and to help stabilize the price within the production year.

During the Third Plan, Thailand increased the agricultural production in order to stabilize the price of agricultural commodities. Accordingly, the diversification of economic crops was promoted to minimize farmer's risk due to fluctuation of prices in the Fifth Plan (1982-86). Moreover, the Sixth National Plan (1987-91) proposed to establish a link between production and marketing by changing the approach from "sale based on production" to "production for sale" particularly in foreign markets. The Thai maintained the government price policies for five major agricultural commodities – rice, sugarcane, sugar, maize and rubber – for a long time, especially when their prices slumped because these commodities were important to the bulk of farmers and consumers of the Thai Economy. Especially, rice price policy had two major goals which were to support the rice farmers through price support and food security for poor consumers especially in urban areas. Other intervening measures during 1960 to 1985 included rice premium, export duty, rice reserves, and export quota.

In early 1986, the rice premium, export quota and export stock measures were cancelled. The burden was separated into two parts and divided between foreign importers and Thai farmers. Consequently these four measures had a negative effect on the resilience of the rice sector.

Since the Sixth Plan (1987-1991), the main measures of agricultural development were to increase the efficiency of natural resource use at farm level and to improve farming system from traditional mono-cropping system to multiple-cropping systems which is complementary to crops, livestock and fisheries activities. After that, the Seventh Plan (1992-1996) gave importance to income distribution and development of human resources, natural resources and the environment, since the problems of these issues had become more severe. The average annual growth rate of agriculture was about 2.5% during this period. Integrated farming, natural agriculture and agro-forestry were called in order to alleviate the problem of natural resources deterioration. During this plan, the government strongly supported farmers' institutions, especially agricultural cooperatives and farmers group, for agricultural production and marketing.

The agrarian reforms in the Eighth Plan have emphasized sustainable agricultural production and competitiveness in the world market. The participation of the private sector and farmers were to be encouraged to apply the appropriate and environmentally less harmful technologies through information on campaigns, demonstrations and technological dissemination for promotion of sustainable agricultural development. Investment in agriculture to lower water demands which required and necessitated huge investments in equipment, infrastructure and human resources.

Thailand has gone through a series of socio-economic and political changes over the last 60 years. The National Economic and Social Development Plans are always top-down. Agriculture which absorbs almost 70% of employment has faced new challenges. The export-oriented agriculture, Green Revolution technology, centrally planned technology transfer models are not able to improve the living conditions of the rural poor, but instead widening income gap between the resource-rich and resource-poor farmers. The agricultural development through expansion of agricultural frontier rather than increasing productivity has resulted in resource degradation. All these happenings and consequences have called for new agricultural development paradigm.

Thai agriculture has been at a crossroads for about a decade. It cannot rely on the two primary factors that supported its growth in the past—surplus land and stable markets abroad. These factor and market constraints have led policy makers to advocate a larger role for agribusiness in agricultural development. A perception has emerged that

Thailand is losing its comparative advantage in staple food crops and that future success in agriculture will depend on the ability of private firms to create more value added and innovate technologies.

During the 1950s, 60s, and 70s, surplus land and demand for food exports encouraged Thailand's "first wave" of diversification out of rice and rubber. Farmers expanded production of upland field crops, mostly cassava, kenaf, maize, and sugar, and also mung beans and sorghum. Expansion was achieved through extensification, though large public investments in roads and primary irrigation supported steady growth in output. Modest improvements in yields were added to many of these crops, including rice, but yields declined measurably in cassava, sugarcane, and mung beans.

A second wave of diversification began in the late 1970s. This wave has been marked by a shift into fruits, vegetables, oilseeds, tree crops, beef, poultry, swine, dairy cattle, and prawns. Many of these commodities require advanced processing technologies and thus yield higher value added at the processing stage. Some are import-competing commodities, and some become inputs for export-oriented manufactures. To support this shift, the Board of Investment (BOI) revised its Investment Promotion Acts in 1972 and 1977 to promote capital-intensive processing on a broad scale. One consequence of these privileges has been rapid growth in food industries, which now constitute nearly one-third of total value added in manufacturing.

There are widespread agreements that the most important areas in which government must have effective policies are physical and social infrastructure (roads, irrigation, and human resources), biotechnology research, extension, the enforcement of grades and standards in traded commodities, and the provision of law and order to secure contracts and property rights. It is regarded that the Thai state has performed measurably well (until recently) in the provision of rural infrastructure, namely large-scale irrigation, roads, and primary education. It has performed less well in research and development (R&D) and the provision of property rights.

Thailand is the outstanding rice exporter in the world. Its export volume has ranked first for nearly three decades since 1982, and accounted for 30% of the world rice trade between 2003 and 2007. At present, Thailand can spare about half of its rice production for export. In the Thai economy, however, the rice industry is no longer a

major sector. It produced 13% of total value added in 1960, decreased to 6% in 1980 and 2% in 2000 respectively. The share of rice export in total export declined considerably from 30% in 1960 to 15% in 1980 and 3% in 2000. There was an export duty called the rice premium which provided 10% of the governmental revenue until the mid-1960s, and the rice industry received a subsidy from the government in 1970s.

Compared with the declining importance of rice in terms of macro economy, there is still a considerable percentage of population involved in rice cultivation. In 2003, the agriculture sector comprised more than 40% of total labor force, while nearly 70% of farm households were engaged in paddy cultivation. A half of farmland is shared for paddy in 2000, and farmers earned nearly 30% of farm income from paddy in 2001. Paddy is now still an important commercial crop for farmers.

There are three main factors which have established Thailand's outstanding position as a rice-exporting country. These are production increase, yield increase and changing farm management of rice cultivation.

The increase in production can be attributed to the increase of planted area and yield. Until 1950s, the yield increased little while the planted area expanded at a rapid pace. In the 1960s, the planted area continued to increase as the yield turned upward. In the 1970s, the yield became stagnant, but planted area continued to grow. After the 1980s, the increase of planted area slowed down while the yield increased remarkably.

The yield increase in the 1960s was attributed to the construction of dams and the improvement of paddy fields by peasants themselves. In 1970s, the yield was stagnant because there was little room left for infrastructure development by both the government and peasants. At that time, the high-yielding varieties of rice were not yet widely disseminated.

The development of rice variety in Thailand had started in the 1960s through the collaboration of the Thai government and the International Rice Research Institute (IRRI). In 1969, the first high-yielding varieties were developed in Thailand and the new varieties were released to farmers in the 1970s. The dissemination of new varieties in the 1970s contributed to the yield increase in the 1980s, since the average yield of dry season crops was twice to that of rainy season crops.

After the late 1990s, however, the yield of dry season crop became stagnant. This reflected the fact that there was no e there was no experimental innovation for upgrading the yield of varieties for dry season crop while farmers became more and more active in investment and management for rice production. In summary, the growth of rice production from the mid-1990s is attributed to the yield increase of rainy season crop and the area expansion of dry season crop. The recent change of rice cultivation can be confirmed in some provinces which are the major rice production areas for export in Thailand.

In conclusion, Thailand's success in agriculture has been achieved primarily through private initiatives, with the state playing a strategic role in setting an investment climate, investing in roads and research, and also supporting agricultural credit to overcome market failures. Specifically:

- The opening of new land was encouraged by tenure rules that allowed family farmers to clear enough land, 4 to 8 hectares, for a small farm and then gain secure property rights so long as they paid taxes.

- The state built roads that provided access to new lands and constructed irrigation works that were especially important before 1980 or so. Thereafter, these investments were complemented by more spending on rural education, electrification, and telecommunications. Public investment in large-scale irrigation gave way to policies supporting private investment in smaller-scale irrigation.

- Public agricultural research has contributed as well. With intensification of Thai agriculture, uptake of agriculture research outputs has increased; as seen with modern rice varieties, use of improved rubber trees, and improved varieties for maize, soybean and cassava.

- To resolve failing rural credit markets, the Bank of Thailand instructed all commercial banks to allocate 5% of all commercial loans for agriculture at an interest rate lower than the market. BAAC has subsequently expanded provision of agricultural credit to 90% of farm households and all farm cooperatives, using a group liability guarantee which enables small farmers to access short-term credit without land title deeds as collateral.

- More recently the state has promoted certification to allow farmers to develop premium domestic markets;
- Government has sought to promote agricultural exports through active participation in trade talks, in multilateral, regional and bilateral negotiations.
- Although agriculture was taxed heavily in the early stages of industrialization, the state had the wisdom to ease this subsequently, once manufacturing was not so dependent on farming for resources.

Vietnam

The agriculture sector of Vietnam has achieved a very strong and rapid development in recent years following the implementation of some important policies and institutional changes on agricultural development in general and on agricultural land reforming in particular. Vietnam has been self-sufficient in agricultural products and aimed at commercial agricultural production with emphasis on agro-product exports. Agricultural sown area is about one-third of country's total land area. Paddy cultivation area is about a half of agricultural land area. With the existing productivity and additional subsidiary production, Vietnam was not only able to ensure food stabilization but also exported 3-4 million metric tons of rice annually. Recently, Vietnam is a world second largest exporter of rice.

The institutional changes in Vietnam's agriculture sector were embedded into general economic reforms (Doi Moi), enabling the country's transition toward a market economy. Since Doi Moi, Vietnamese agriculture has responded to the reform environment. The most noticeable and publicized achievement is a rapid increase in rice production, such that Vietnam is now the second largest exporter of rice in the world behind Thailand.

In addition, Vietnam is a significant player in the world market for coffee, pepper, cashew and seafood. Export earnings from agricultural products have been continuously increasing since 1990. Because agriculture in Vietnam is now more diversified, sub-sectors such as industrial crops, vegetables and livestock have developed rapidly and have been able to meet domestic demand. During the reform period, the level of farming intensity has improved and new technology has been more widely applied.

Vietnam is a country in transition from a planned to a market-oriented economy. In this situation, consideration of institutions becomes important as they are influential on not only what can be accomplished but also how quickly change can occur.

Both the history of the national liberalization revolution and the economic development of Vietnam are closely linked to land issues. Before independence in 1945, agricultural land was divided into two categories: communal and private. In rural areas, there were two main classes according to ownership of land: landlords and tenants. The landlord class accounted for only 2 % of the whole population but occupied more than half of the total land area, while 59% of farm households were landless tenants of the landlord class.

After 1945, the new government implemented changes to agricultural policy. Up to 1952, the government carried out land redistribution and reduced rents for poor farmers and tenants. After 1954, the north of Vietnam implemented a radical land reform program. The target was to nationalize land of the Vietnamese and French landlords and redistribute it to peasants with little or no land. As a result, about a quarter of the land was redistributed to farmers on a more or less equitable basis, benefiting about 73% of the north's rural population.

Following this initial period of land reform, rural areas in the north of Vietnam entered a stage of agricultural collectivization involving agricultural cooperatives. In the south, the government based in Saigon implemented land reform in different way, using rent control and a land ownership ceiling programme in 1956, and a distribution of land and titling programme in 1970. Approximately, 1.3 million ha of agricultural land were redistributed to over one million farmers under a latter programme, which was known as "the land to the tiller programme".

After the end of the war of reunification in 1975, the Vietnamese government planned to further develop the movement toward agricultural collectivization. In the north, agricultural cooperatives enlarged their size from village to commune level. In the south, farmers were still allowed to operate under a relatively free market until 1978 and continued on a household farm basis although farmers worked in cooperatives. Under collectivized agriculture, production fell as a result of a lack of incentives for individuals to contribute to production and agricultural output increased annually at a low rate of 2%.

Reform in the agricultural sector started with the Communist decree, Contract 100. Under this policy, agricultural cooperatives assigned agricultural land to farming groups and individuals. Outputs were still under the control of the cooperatives. Land was still owned by the government and managed by the agricultural cooperatives. The introduction of the system had a significant impact on agricultural production, especially rice which increased by 6.3% a year during 1981 and 1985. However after 1985, growth in agricultural production declined and it was only about 2.2% annually in the period of 1986 to 1988. In early 1988, food supplies did not meet demand and there was food shortage in the north. In the south, a series of conflicts arose in rural areas, caused by 'equitable' land adjustment¹.

In response to this situation, the Doi Moi in agriculture was carried out according to Resolution 10 of the Politburo in 1988. Under this reform (Contract 10) system, farmers were assigned agricultural land for 10 to 15 year terms and the farm household was recognized for the first time since the collectivization period as the basic economic unit. Since this time, most of the means of production have been recognized as privately owned. Another aspect of this policy was that farmers could be assigned the land they had owned prior to 1975. However, it was not supported by laws for the assignment and the inheritance of land use rights (LUR). The 1993 Land Law was enacted in response to this. This law was the most important for the agriculture sector during Doi Moi. It revised its versions in 1998² and 2001³.

Under the Land Law, farmers were allocated land for long-term and stable use and were granted five rights of land use- the rights of transfer, exchange, lease, inheritance and mortgage. The duration of land allocation was 20 years for land used for annual crops, and 50 years for land used for perennial crops. The Land Law also put a ceiling on the amount of land that can be allocated to households: for annually cropped land this is 2 hectares in the central and northern provinces and 3 hectares in the southern provinces, and for land planted to perennials, the limit on holdings is 10 hectares.

¹ T.G Macaulay, 2006

² In 1998, two additional LUR were assigned to farmers, the right to re-lease land and the right to use the value of LUR as joint venture capital for investment.

³ In 2000, further revisions to the 1993 Land Law resulted in farmers being assigned the right to gift their land to relatives, friends or others.

Following the land allocation, agricultural land use titles were issued to farm households. By 1998, land use certificates (LUCs) had been issued to 71% of farm households and by the end of 2000 it was more than 90%¹.

A new Land Law, which has replaced the 1993 Land Law and its revisions, was enacted in December 2003 and has been in effect since July 2004. Its significance was for the first time that land was officially recognized as being a 'special good', having a value and hence able to be traded. The Law has confirmed that 'land is a significant internal force and capital of the state' and acknowledges the real estate market.

Land policy changes in Vietnam since 1981 are recognized as contributing significantly to production increase and development in agricultural and rural sectors. Total agricultural output increased by 6.7% annually during the period 1994 and 1999 and about 4.6% during the period 2000 and 2003. Food security was at the national level, although Vietnam was food importer before 1980s.

Land policies that distribute land to individuals and assign LUR allow the development of land markets that can bring about an efficient allocation of resources. Under the Vietnamese Constitution, land is the property of the people as a whole and the state administers it on their behalf. The new 2003 Land Law states that the government is the representative of the people's ownership. Vietnamese individuals, households and organizations can hold and transfer rights to use land. By providing increased security of tenure over land, facilitating access to credit through allowing the use of LUR as collateral and making LURs tradable, the 1993 Land Law provided the foundation for a formal market for land. However, LUR in Vietnam are not free legislative requirements and constraints.

Following the Doi Moi reform, the share of agriculture in GDP has been steadily falling, but the employment share for the agricultural sector remains high. In recent years, the composition of employment in the agriculture sector slightly decreased.

Again, land allocation policy has resulted in fragmented and small landholdings, especially in the north, because of the emphasis that was put on equitable allocation, in turn, these conditions are crucial issues which can lead to less efficient land use and conflicts about land. Small and scattered land holdings hamper mechanization and

¹ Marsh, 2006

technology adoption, and involve additional time and labor for farming activities. Moreover, small farm sizes constrain in the potential income from farm production.

Concerning agricultural credit, the credit market in Vietnam has been seriously distorted by government intervention. Additionally, agricultural credit policy in Vietnam is often used as an instrument of social welfare policy. Commercial credit availability for farm households commenced in 1993. Using LUR as a trustable mortgage, a household can borrow a fixed amount. Based on current regulations, the amount can be borrowed from the Vietnam Bank for Agricultural and Rural Development (VBARD) is not larger than VND 10 million for household farms and VND 20 million for commercial farms. The advantages of this arrangement are that households can access credit easily. However, although LURs are accepted as collateral, if foreclosure occurs the bank cannot easily rent or sell the land.

The use of LUR as a mortgage asset results in a high incidence of small and short-term loans, primarily production, which were around VND 5 to 10 million. Such small and short-term loans constrain development of the farm household economy. Formal, semi-formal and informal credit providers operate together in the rural credit market in Vietnam. The formal banking sector, and particularly the VBARD, is now responsible for the bulk of loans made to rural households¹.

Favorable conditions for mechanical application for land preparation have been created by the land policy reforms. The households after being given certificate on agricultural land use have been induced to adopt innovative production technologies and practices as follows:

- The use of new varieties with high-yield potential and disease- and pest-tolerating capacity and suitability to each region have resulted in significant increases in crop production. The case of rice in this regard has been particularly important, as the hybrid rice yields could be as high as 14 to 15 ton per hectare.
- Using of fertilizers on commercial agricultural crops in agro-ecological zones.
- Following of appropriate disease and insect management practices for commercial agricultural crops.

¹ Ibid

- Application of technologies on processing of commercial agro-products for domestic consumption demand and for export.

For agricultural research, since the 1960s, the government has attempted to strengthen its National Agricultural Research System (NARS), which have now grown to include institutions in six different ministries. Under the current structure, research efforts are fragmented and not well coordinated. However, programmes are being reviewed so as to focus on important agricultural problems requiring adaptive, on- farm participatory research and to improve linkages with extension staff and farmers.

The key constraints include: insufficient funding of many institutes and poor coordination among the research programmes of various related institutions – resulting in duplication or gaps in research; inflexible and slow response to the changing needs of a market-oriented agriculture; weak linkages with extension; a shortage of qualified researchers; poorly maintained research infrastructure and equipment; and insufficient involvement of stakeholders in the planning and implementation of research programmes.

Because of limited funding for breeding and research operations, research institutes supplement their budgets by selling seed directly to both seed companies and farmers. Hybrid seed is increasingly popular and is widely planted by farmers. In addition, there is a need to review the government policy of subsidizing hybrid seeds with a view to encouraging development of a competitive seed market. Despite wide adoption of improved varieties and hybrids, productivity remains low. In the Mekong delta, for example, rice yields have stagnated over the past five years. Maize yields are also low (2.5 tons/hectare). The poor quality of the seed used (genetic base, purity and storage conditions) is considered an important contributory factor. There is a need to strengthen the seed certification, quality control and regulatory roles of public institutions, which are weak.

The public extension system is also the dominant service for the agriculture sector. The service is organized at four levels: central, provincial, district and municipal. In July 2003 the government established the National Agricultural Extension Centre (NAEC) under MoARD (Ministry of Agricultural Research Department) to coordinate national extension activities, working with other partners in the system. Although still dominated by government agencies, other organizations also participate in extension and training

support. These include mass organizations such as women's unions, youth unions and commodity-specific producer associations, for example, for coffee, tea or cotton. In addition, NGOs, universities, consultants and private firms are also beginning to emerge as extension service providers, although still very small compared with the government service and far below the needs of the rural population.

It is generally accepted that the extension service contributed to increased national food production, particularly rice, during the 1980s and 1990s. However, poor communities and remote and upland areas were inadequately served, and productivity there has remained low. The institutional changes have included the establishment of advisory councils for extension at the provincial level to involve key stakeholders, including farmers, mass organizations, NGOs, the private sector and researchers. Attempts are also underway to decentralize extension support and mainstream participatory approaches.

Despite these efforts, however, the service is finding it difficult to adjust to new circumstances, particularly those led by an increasingly deregulated and market-oriented economy. The key constraints include inadequate coverage due to the shortage of human and financial resources; inadequate understanding and knowledge of new technologies to support the diversified needs of farmers; weak technical and managerial capacity of provincial extension services and grass-roots extension agents; poor linkages with the research service; a persistent top-down approach to planning and delivery of extension; weak systems for data collection, analysis and dissemination to address rural people's need for knowledge and information; and weak monitoring and evaluation to assess the quality of the services being provided to local people.

Farmers have to rely on agricultural market systems that are highly fragmented and poorly developed though they have marketable surpluses of a range of agricultural commodities due to the increasing commercialization of agriculture. The agricultural market systems remain poorly developed, with inadequate supporting infrastructure and heavy dominance by state-owned enterprises. Despite the quick growth in exports over the last ten years, the domestic market is still the main outlet, absorbing nearly 90% of Vietnam's food production.

Distribution of agricultural prices and other market information is undertaken by the Information Center for Agriculture and Rural Development (ICARD), established in 1997. However, the information disseminated has often been late and has not reached poor farmers in many parts of the country.

In Vietnam, contract farming is growing fast and has now been tried in a number of situations involving vegetables, fruits, rice, and baby corn. Two types of contract systems can be observed. In the first, the processing company or buyer contracts an organization representing small farmers, for example a cooperative, and the organization contracts small producers individually. In the other case, the processing company or buyer contracts farmers directly. However, there is need for

- open and trusting relationship between producers and buyers
- well-trained and organized producers
- clearly defined and well-understood terms and conditions of contracts in appropriate forms
- impartial advice based on analysis of different options, as contract farming is not suitable for all products and situations

Overviewing the institutional changes in Vietnam's agriculture sector, it can be observed that since the 1980s, Vietnam's economic reforms have generated powerful incentives to invest in agriculture. Agricultural production after implementing comprehensive renovation and decollectivization has achieved 4.3% annual growth rate during 1989 and 1999 which has been stable and evenly distributed among sectors. The greatest achievement has been in food production, which expanded rapidly and continuously the annual rate of 1 million tons per year and reached 23 million tons in the recent years with strong implications for national food security. Agriculture growth peaked at an average of 4.9% per year during 1996 and 2000. It needs to be mentioned that despite high population growth rate and annual disasters, the country has been able to produce exportable surpluses of nearly 3.7 million tons of rice per year.

As a result of rapid growth, Vietnam has been able to shift from a subsistence-based economy to one of sound food security and became a strong exporter of agricultural products. This has laid a solid foundation for the smooth transition from a centrally planned economic system to a market economic system.

Among the rising food production, commercial production sectors have also been on the rise. The production of coffee, rubber, cashew nuts, mulberry, cotton, fruits sugar and animal products has expanded significantly. Food surplus had helped to keep low cost of living and correspondingly low real wage for labor transferred from agriculture to non-agricultural sector. On the other hand, the increase in per capita rice production provided to increase national food security. Later on, the growth of food production played an important role in stabilizing food prices, increasing real wages, and creating opportunities for farmers to participate in more profitable, higher-value farming and non-farm activities.

From 1980 to 1984, rice yields rose by about 32% in the North and 24% in the South as a result of Directive 100 and subsequent complementary reforms, followed by similar gains as rice yields increased from 3.2 tons to 4.9 tons per hectare between 1990 and 2006, as a result of Resolution 10 and other policy and economic changes.

Apart from meeting domestic demand, many of these products have also been routed to world markets. Although average annual exports of Vietnam were considerably less than US\$1 billion between 1989 and 1994, they exceeded US\$ 1.3 billion in 1994, US\$ 2.0 billion in 1995; and US\$ 4.3 billion in 1998. Taking the decade as a whole, the annual growth rate of Vietnamese exports was in excess of 13%.

As planned, the growth of agriculture in Vietnam has a widespread and favorable impact on the rural masses. Part of the reason could be Vietnam's growing emphasis on the production of non-food commercial crops which accounted for a rising share of 35% in 1993 to 38% in 1995 in total value of agricultural production. It may be noted that commercial plantation crops are not only high value crops but are also known for their high labor intensity. As a consequence, it can be expected that both the farmers and rural labor will be equal beneficiaries of any development in agriculture. It is in the light of this expectation that the standard of living of Vietnamese farmers improved substantially and incomes of people in rural areas increased markedly. The number of rich households increased from 8.1% in 1990 to 9.7% in 1991 and 15% in 1992. The poor households had been reduced from 26% in 1993 to 15.3% in 1999. The rural infrastructure such as transportation, irrigation, electricity, healthcare, and schools also improved.

During the 1990s, rice prices increased substantially and it helped households in rural areas. However, the number of people living in absolute poverty is still high and it reflects that some households still have poor access to land or have access only to poor-quality land.

Since 2001, Vietnam's agricultural growth has been continuing at 3.7 % per annum despite a difficult external environment of low commodity prices in the world market. Moreover, it enabled more than 4 million tons of rice export every year. Agricultural diversification and commercialization aggressively took place. Many cash crops such as coffee, rubber, black pepper, and cashew nut have gradually occupied important positions in the international market. Vietnam has become the second largest coffee exporter and the first largest exporter of Robusta coffee since 2000. Similarly, Vietnam has become the biggest exporter of cashew nut and pepper, accounting for more than 50 % of world exports since 2003/04.

However, many challenges still exist for agriculture in Vietnam such as falling agricultural product prices, increasing competition in the world market, and a slowdown of agricultural production growth rates. Moreover, farmers in Vietnam are likely to remain relatively poor and a high proportion of the population will continue to be involved in agriculture and live in rural areas.

Chapter 3

Institutions and Institutional Changes in the Agriculture Sector of Myanmar

Myanmar is an agriculture-based economy with more than 70% of population living in the rural area. The agriculture sector contributes one-third of Gross Domestic Product (GDP) and two-thirds of total employment. Thus, it also provides food supply for all citizens and raw materials for manufacturing sector. Agricultural exports accounts for about 16% of the country's total exports.

With the importance of this sector, governments of Myanmar have made efforts for the development of the agriculture sector. Depending upon their changes in the administrative structure and policies, agricultural institutions are developed in accordance with the economic systems. Myanmar has experienced many institutional changes in the agriculture sector during the period of the study. These changes include land policy and property rights system, water supply and irrigation, research and extension facilities, farm mechanization, credit institutions and marketing institutions. These will be explored by different periods of political and economic systems.

3.1 Land Policy and Property Rights System

Formalization of land rights helps to engage the poor in burgeoning property markets for improving security of tenure for the poor¹. Secure ownership and the ability to exchange land in a-personal markets is critical for the investment climate for small entrepreneurs, in addition to being a pre-condition for the emergence of financial markets. Development of the agriculture sector depends on the policy and planning or overall institutional environment affecting the sector such as land policy and ownership rights, freedom to cultivate crops of their own choice and the methods they desire. Land policy and property rights system significantly affected the agricultural development of Myanmar.

¹ de Soto, 2000.

Colonial Period (1886-1948)

During the period of Myanmar Kings, it was obvious that the political system was feudal and there were four kinds of land during the feudal days¹. According to the dama-u-gya land system, land held became the private property of the cultivator, which he could mortgage, sell or bequeath to his descendants. During the feudal period, the main crops grown were rice, wheat, sugar-cane, cotton, tobacco, pulses, maize and indigo. The agricultural system in this period, with the exception of cotton, was for domestic consumption and hence credit was not necessary. Credit was necessary only in the cases of crop failure due to droughts or warfare or wild pigs. In such cases, the neighbors in the village would be sources of credit². Agricultural activities were mainly a domestic affair using family labor and in the case of transplanting and harvesting, farmers would help each other.

Under the British Rule, Myanmar agriculture was domestic agriculture before the opening of the Suez Canal and they practiced "subsistence farming". In Lower Myanmar, land was so abundant and new land yields a small crop, sufficient for the cultivator's family, with very little labor. At that time people did not need to cultivate more intensively because, whatever land showed signs of exhaustion, any peasant family could abandon it and take up fresh land. Thus the system of cultivation generally practiced then closely resembled subsistence farming under feudal system. Little labor was required and what was needed could be produced by the cultivator's family. Little capital was required and the amount required was fairly constant from year to year.

After the opening of the Suez Canal, domestic agriculture gave place to commercial agriculture. The construction of the Suez Canal, by opening up European markets, gave the cultivator a secure market for any surplus that his land might yield. They wanted more land and therefore they wanted more capital to buy or clear land to pay laborers for cultivating it. This changed from domestic agriculture to commercial

¹ Crown lands (land belonging to the King), lands held under various kinds of services tenures, waste land and land under allodial title (dama-u-gya land for which the owner had to pay the share of the produce to the King)

² Furnivall, 1957

မြန်မာနိုင်ငံတော်
ပြည်ထောင်စု
ရုံး

agriculture which has led to new relations between landowners, cultivators, laborers and capitalists both in Upper and Lower Burma¹.

In 1886, the British annexed the whole country and the conquest of the British marked the end of the feudal system, especially in Lower Myanmar. The political and economic institutions of Lower Myanmar were gradually transformed as the area was rapidly drawn into capitalistic, commercially oriented global economy². Thus, the feudal lands became private property and the commercialization of the county's agriculture began to take hold³.

The objective of the British government regarding the agrarian system was to strive to make rights to land easily attainable and at the same time to ensure that holdings came to be controlled by agriculturists and not by speculators and money lenders. Under the British rule, five different systems of occupying land came to be recognized:- (a) the Squatter system, (b) the Patta system, (c) the Lease system, (d) the Grant system, and (e) the Colony system⁴. Two dominant types of land system out of the five introduced during the period were the squatter system and the patta type. The Squatter system of land tenure corresponds to the tenure by dama-u-gya system in the feudal days. On the other hand, under the patta system, the government granted tenure before the cultivator cleared his land. Either form of tenure gave the landholder a permanent and heritable title to his land which he could sell, mortgage or transfer.

With land always passing through the law courts or being sold for debt, there has always been land in the market and it was said long ago that land in Lower Myanmar changes hands almost as frequently as securities on the Stock Exchange. This free trade in land had exercised an important influence on the agricultural development of Lower Myanmar. It led to the financing of agriculture on industrial lines and has thus contributed to the growth of industrial agriculture⁵.

The policy of the British Government regarding the occupation of land has passed through two stages. In the early days, the main object of their policy was to encourage the expansion of cultivation. For the revenue point of view, the waste of swamp and jungle to

¹ Furnivall, 1957

² Adas, 1974

³ Furnivall, 1957, and Tun Wai, 1961

⁴ Furnivall, 1957

⁵ Ibid

be reclaimed and brought under cultivation such that the cultivators should be able to pay revenue out of the produce of their land. With this object, government endeavored to make it as easy as possible for people to take up land. But as the population at that time was so sparse, the government decided to encourage immigration to promote cultivation. The colonial government also attempted to attract immigrants chiefly from Upper Myanmar and then from India.

To promote immigration into Lower Myanmar, the government waived payment of the capitation tax for the first two years after a migrant's arrival. During the colonial period, land revenue was assessed at 10% and then 20% of gross produce. Then in later days, it was changed to one half of the net profits, and net profit was defined as gross produce less cost of cultivation and cost of living¹.

At that time, the price of paddy responded to the new demand and by 1880 the price of paddy rose significantly. Cultivators could obtain a good price for the entire paddy that they could cultivate, and therefore wanted all the land they could acquire so as to grow as much paddy as possible. The creation of a body of peasant proprietors became the main object of the agricultural policy of the government. But, this policy was met with a very small measure of success and over a great part of Lower Myanmar, much of the land was owned by traders, money-lenders and other non-agriculturists who own large estates which were cultivated by tenants².

As a result of commercialization of agriculture, the cultivated land area increased from 2 million to 19 million acres, especially for paddy, which constituted two-thirds of total cultivated area. Due to a favorable international market for rice, Myanmar agriculture was monoculture or mono crop cultivation, mainly depending on cultivation and export of rice. Rice production increased 3.7 million tons in 1895/96 to average 7.4 million tons during 1936 to 1940. Rice export was about 2 million tons to 3.2 million tons during this period. Prior to World War II, in the late 1930s and early 1940s, Myanmar was a leading regional economy and a leading exporter of rice in the world. However, indigenous Myanmar benefited very little from the profits of the development of Myanmar's agriculture and rice industry. It was because the trading and exporting rice

¹ Tun Wai, 1961

² Furnivall, 1957

was controlled by the foreign companies. Moreover, there was the lop-sided agricultural development, entirely depending only on rice¹.

The failure of the government to create a class of peasants proprietors resulted in agriculture indebtedness. Chettiars, who were money lenders, also played a part in this issue as they charged high rates of interest. During the earlier colonial period, when natural economic (barter) system was transformed into market (money) economy, Myanmar cultivators in Lower Myanmar were most probably well-off and prosperous.

When the paddy purchasing price was normally high, cultivators afforded repayment to their creditors. After 1900, however, slumps occurred due to the monopolist actions of the capitalists and the Great Depression. Finally peasants were hit hard. The withdrawal of credit by the Chettiars hastened the decline of the peasant's financial solvency for forcing him into the hands of sabapay (repayment in kind) money lenders. It was getting worse and worse. Having invested heavily in terms of money and labor in expansion of their lands, peasants had to surrender their cultivated lands, cattle, and household items to Chettiars and merchants. Peasants lost their squatter and hereditary lands predominantly to foreign non-agriculturists and indebtedness became a widespread phenomenon.

In Lower Myanmar, out of 11 million acres, about 52.5% of total land was occupied by cultivators and nearly half, about 47.5 percent by non-agriculturists². In the whole country, 66.8% of total land was occupied by cultivators and 33.2 % by non-agriculturists. A consequence of this was that a large proportion of farmers were tenants, who now had to pay rents for land they had cleared and owned previously. The agricultural indebtedness gave rise to the major problem in Myanmar agriculture as land tenure resulted in the massive transfer of land into the hands of non-agriculturists, a large portion of who are aliens and who took their profit out of Myanmar.

In fact, during the latter part of the British rule, an extensive alienation of land was the cause of all agrarian problems in the country. This extensive land alienation was the fact that during the colonial days, the Myanmar farmers were no longer able to support themselves.

¹ Furnivall, 1957

² Sundrum and Aye Hlaing, 1961

The expansion of agriculture in the Ayeyarwady delta region induced the cultivators to borrow money from the money lenders both local and foreign, on the security of lands at usurious rates of interest, to meet the expense for extension of paddy cultivation. When the money lenders recalled their loans in the depression years of 1930s the cultivators found themselves unable to repay the loans. Thus, agricultural indebtedness spread rapidly throughout the country. In fact the whole economic system became based on agricultural indebtedness and it inevitably led to disastrous results.

By 1939, about one third of all the agricultural lands in Myanmar had been transferred to the money lenders (Table 3.1). The colonial government attempted to solve the problem by passing the Tenancy Act 1938 and the Land Alienation Act 1939. But they could not be put into operation due to the outbreak of World War II. In 1947, in Lower Myanmar which had been thrown open to foreign influences much earlier, roughly half of the lands were in the possession of non-agriculturists who had no interest in the land except the rents. They did not even reside near the lands they possessed (Table 3.2).

Table 3.1 Condition of Land Alienation in Myanmar (Burma) in 1939

(Acres)

Location	Total Agricultural Land	Land Alienation	As % of Total Agricultural Land
Lower Burma	5,385,150	11,293,092	49%
Upper Burma	1,157,944	8,167,666	14%
Total	6,543,094	19,460,758	33%

Source: B.O, Binns, Agricultural Economy in Burma, p.21.

Thus, landlordism, indebtedness, insecurity of tenure, and uncertainty of prices became the problems which beset the farmers. Indebtedness of rural households is shown in Table 3.3. As seen in this Table 3.3, indebtedness was so large in three Districts in Lower Myanmar. Likewise, the number of tenants had increased year by year as can be seen in Table 3.4. Between 1921 and 1931 shows a dramatic increase of 41.17% in the number of tenants while it was only 12.64% between 1911 and 1921.

Table 3.2 Classification of Occupiers of Agricultural Land in Principal Rice Growing Districts* of Lower Myanmar (Burma)

(Thousand Acres)

Year	Total occupied area	Area occupied by non-agriculturists	Area occupied by Chettiars	As % of area occupied by Chettiars to non-agriculturists	As % of area occupied by Chettiars to total occupied area
1930	9,249	2,943	570	19	6
1931	9,305	3,212	806	25	9
1932	9,245	3,770	1,367	36	15
1933	9,266	4,139	1,782	43	19
1934	9,335	4,460	2,100	47	22
1935	9,408	4,687	2,293	49	24
1936	9,499	4,873	2,393	49	25
1937	9,650	4,929	2,446	50	25

Source: Report of Land and Agriculture Committee (RLAC), 1939, Part 2.

Pegu, Hanthawaddy, Insein, Prome, Bassein, Henzada, Myanungmya, Maubin, Pyapon, Thaton, Amherst, and Taungoo.

Table 3.3 Indebtedness in the Rural Sector

Year	Districts	Average Debt per Household	% of Farmers Indebted
1930-33	Hanthawaddy	Rs. 676	93
1930-32	Pyinmana	Rs. 252	73
1927-31	Pakokku	Rs. 96	64

Source: B.O. Binns, Agricultural Economy in Burma, 1948, Rangoon, p.48.

Table 3.4 The Number of Tenants in Myanmar (Burma)

Year	Number of Tenants	Increase of tenants (in per cent)
1911	912,359	-
1921	1,027,597	12.64
1931	1,512,290	41.17

Source: Khin Mar Mar, A Historical Study on Land Nationalization Programme in Burma, 1969.

It was true that the British government had come to realize the urgent need for financing agriculture as early as 1883 when Land Improvement Loans Act was passed and a year later enacted the Agricultural Loans Act. But, these Acts did not help the farmers much due to domination by foreign interests in the Burmese Legislature¹.

The agrarian problem of indebtedness was further aggravated by the fact that Myanmar had developed into one-crop economy during the period of agricultural expansion because although the area under paddy cultivation increased more than four times, the increase in acreages for other crops were not so great². This absence of multiple crop cultivation had made the Myanmar farmers to rely too much on the fluctuations of the rice market. Thus this problem of indebtedness served as a generator of other problems like land alienation and insecurity of tenancy.

For this, the British government with the enormous pace of land alienation began to oppose the creation of landlordism in Myanmar. In this case, the Land and Agriculture Committee was formed in 1938 to report on these agrarian problems such as insecurity of tenancy, land alienation, agricultural finance and regulation of money lending.

Against the enormous rate of land alienations and the strength of the recommendation by the Land and Agriculture Committee, the British Government passed the Land Alienation Act in 1941. This Act prohibited the sale of land to a non-agriculturist, as well as foreclosure of land by a non-agriculturist³. This Act also allowed the Government to buy up at reasonable prices, all land that was in the hands of non-agriculturists and to distribute among agriculturists. However, due to the outbreak of the Second World War, this Act was never invoked.

At the end of the British administration in 1948, the total area owned by non agriculturists in only Lower Myanmar, amounted to 5 million acres. This area was 48.2% of the total area cultivated and it was found out that 47.8% of the non-agriculturist owned land was in the hands of the Chettiars⁴. Thus this problem of land alienation was left outstanding and unsolved when Myanmar attained her independence in January 1948.

¹ The Guardian, Peasant Day Supplement, 2 March 1969

² Aye Hlaing, 1958

³ Andrus, 1948

⁴ Khin Mar Mar, 1969

Parliamentary Democracy Period (1948-1962)

Before independence, the national leaders of Myanmar realized that the basic needs in the overall reconstruction of Myanmar after WW II, was economic reconstruction based on agriculture and the fundamental necessity of such reconstruction was the stability of the agricultural population and good agriculture. Thus, in addressing the AFPFL Convention in 1947, it was declared that "land must be in the hands of those who work the land and there must be no large holdings whatsoever". They also stated that nationalization of land was also one of the pre-requisites to achieve a Myanmar democracy. At that time, there was no association which can represent the farmers' problems. Even the government officials reported the severe conditions of the land problem, but the British did not take action against the interests of their foreign land owners.

After independence, thus Myanmar inherited from the British, three major agrarian problems namely: indebtedness, land alienation and insecurity of tenancy. All of these problems called for a major land reform programme in the country. Besides, at that time more than 80% of the total population in 1948 resided in rural areas and it was expected that an estimated about 80% of the total value of industrial and agricultural output would be derived from agricultural and subsidiary rural products¹.

So in pursuance of the national leaders' policy, immediately after the AFPFL's assumption of office, a conference of experts and the services was called on 6 June 1947 at the "Sorrento Villa" in Yangon². Most of the valuable materials from the "Sorrento Plans" were later incorporated in the Two-Year Plan drafted in 1948 by a committee. The policy of the state in relation to agriculture as envisaged in the Two-Year Plan was threefold.

In order to materialize the above policy regarding agriculture, the government also planned to concern itself with such schemes like re-acquisition of alienated lands, reorganization of agricultural land, increased production, regulation of rent, agricultural credit, policies and methods regarding crop production, to create satisfactory working conditions for agricultural labor, to control and stabilize price and finally plans to

¹ Khin Mar Mar, 1969

² Ibid

experiment mechanized farms were drawn up. The use of tractors instead of animal power was also considered¹.

Then, the government of the Union of Burma (Myanmar) passed the Tenancy Disposal Act of 1948, before a major land reform programme could be launched. According to this Act, the rent was fixed at two times the land revenue of the land the tenant worked. This rent worked out to roughly one-fifth of the gross produce of the land. However, this Act served only as a mere support to the farmers with no relief on their problems of indebtedness, landlordism and tenancy problems. Therefore, in order to provide better conditions to the tenant cultivators and the Tenancy Act 1938 was replaced with the Disposal of Tenancies Act of 1953.

The Land Nationalization Programme in Myanmar was officially launched in 1948. This urgency was due to a number of factors both economic and social, that had been pressing the Myanmar agriculturists since the days of early 1900s, and the British government had done nothing note-worthy to improve the present conditions of the Myanmar farmers. The main objective of the Land Nationalization scheme was to create a new economic and social life for the peasants, through systematic distribution of lands and modern method of cultivation coupled with rural development envisaging the formation of agricultural producers' co-operatives for optimum utilization of land and labor.

When this programme was undertaken in selected areas, the actual implementation of the Land Nationalization Act was paralyzed due to the various insurrections that disturbed almost the whole country. However, as soon as the conditions of the country came under control in 1952, this Land Nationalization Programme was laid down as one of the ten major segments of the Economic Development Plan under the Pyidawtha or Welfare scheme in 1952. With the knowledge gained from the practical test made in those selected areas, the government was competent to draw more comprehensive legislative measures for the whole country². The result was the repealing of the 1948 Act and the passing of the Land Nationalization Act 1953³.

¹ Two Year Plan, 1948

² Khin Mar Mar, 1969

³ Thakhin Tin's Speech, 1953

The Land Nationalization Act provided for a change in land tenure which was the most important measure of land reform. Under the Act all transfer of land whether by mortgage, sale, and gift or otherwise, save as provided in the Act were forbidden¹. The mechanism of the Land Nationalization Act 1953 was provided for, in the Act by the creation of land committees viz., the Village Land Committee, the District Land Committee and the Central Land Committee. Successful implementation of the Act required a staff of well trained technicians. Another requirement for the successful implementation of the Land Nationalization Programme was the creation of agricultural credit system in Myanmar².

The Act prohibited mortgage, lease or renting of agricultural land whether exempted or distributed. The land holder must continue working the agricultural land as an agriculturist and must not leave such land fallow without sufficient cause. Condition of land nationalization and redistribution is shown in Table 3.5.

If an agriculturist failed to comply with certain conditions prescribed in the Act, his land would be liable to resumption without any payment of compensation. Besides these specifications and provisions, the Land Nationalization programme involved both short term plan and long term plan. Short term plan included such works as the formation of the Central Land Nationalization Committee and its operation, collection of information and experience necessary for land nationalization, training of Land Records personnel; the election, formation and training of land committees, the establishment of Model State Mechanized Farms and Collective Farms and making agriculturists to establish collective and co-operative farming³.

The long term plan included the appointment of Wundanhmus or organizers whose main duties were to reside permanently in village-tracts concerned and carry out the nationalization work and also to render proper and disciplined assistance in all necessary work connected with the building of "New Order" of the rural economy⁴.

¹ Land Nationalization Act 1953, Appendix One, Chapter Two

² The Report of the State Agricultural Bank Committee, 1948

³ Pyidawtha Conference 1952

⁴ Pyidawtha Conference, 1952

Table 3.5 Land Nationalization and Redistribution (1953/54 - 1957/58)

(Thousand acres)

Year	Resumed	Exempted	Available for redistribution	Redistributed	Remaining to be redistributed
1953/54	261	112	147	127	20
1954/55	1025	506	509	432	77
1955/56	732	348	379	338	41
1956/57	561	276	283	256	27
1957/58	676	362	313	263	50
Total	3256	1604	1631	1416	205

Source: BSPP, Burma Agrarian History Part (1), Rangoon, 1970.

One requirement for the agriculturists who had been distributed land was that they must be of a recognized co-operative society. There were two objects in this scheme; the first was to enable agriculturists to borrow agricultural loans collectively and to repay collectively. The second reason was to enable them to sell the produce of the land collectively. The government's intention in collective borrowing and repaying was to enable the cultivators to pay a lower rate of interest and thus the policy of the government then was to issue loans only to the co-operative societies.

Other important parts of that reform programme were Disposal of Tenancy Act, 1948 (which let the tenant to have secured tenure) and the Tenancy Standard Rent Act, 1950 (which restricted rents on agricultural land to be not more than two times of the land revenue payable on rice lands). Similar limitations were also imposed on the land used for other crops. In 1953/54, all the lands were nationalized and redistributed to the Myanmar farmers. Due to land nationalization and redistribution, land-holdings of farmers became small. However, the land was not collectivized. Until the 1960s, the farmers had control over their land, and they decided the crops and the planning acreage.

However, the Land Nationalization Act, although enacted, was bound to be enforced slowly because of the instability of the regime. The government did not officially state what progress was being made in enforcing the act until 1963, when an explanation was made by the government through the Tenancy Act.

Contrary to the aim of the agrarian reform, the land owned by the non-agriculturists had even increased and it was obvious that the land reform did not benefit

the poor small farmers¹. The implementation of the land reform had to stop in 1958/59 due to dissatisfaction among the peasantry. As a result, the socio-politico-economic position in the rural sector was not strong as in the colonial days. Paddy production and rice exports lagged behind the pre-war level. The condition of the agricultural laborers was worse than that of tenants, although wages were about two times higher than in pre-war days. Technology was almost the same as in pre-war days and agriculture production was achieved through land expansion.

As a result of the damage suffered during the war, the cultivated area in 1945/46 was only 11.7 million acres or 63 % of the pre-war level and production was disrupted for two years after independence due to civil war. Crop production was the major agricultural activity and paddy was still the major crop, followed by other cereal grains, pulses and oil seeds. Total sown acreage was about 18 million acres and cultivated area of paddy was nearly 12 million acres in 1959, the level of the pre-war situation. Paddy production was slightly increased during this period with the production of more than 6 million tons and exports of 1.7 million tons in 1960/61.

Socialist Period (1962-1988)

Soon after the Revolutionary Council came to power in March 1962, an agricultural development program aimed at abolishing landlordism and improving the social and economic conditions of the peasantry was launched. Its objectives were as follows:

1. to increase agricultural production through raising productivity;
2. to introduce scientific methods in agriculture;
3. to improve the agrarian system (structure);
4. to improve the social conditions in rural areas; and
5. to organize the peasantry throughout the country.

Various laws and acts concerning the agriculture sector development were enacted during this socialist period as the priority for better living conditions was given to the farmers and workers in the nation following the ideology of the Burmese Way to Socialism.

¹ Mya Than, 1979

The first Tenancy Law was decreed in 1963 by which the right of tenancy of land was vested in Agrarian Committees composed of farmers at the village level. Two years later, the Tenancy Law of 1965 abolished tenancy, which was the most progressive step in the agrarian history of Myanmar. This law affected about five million acres, which comprised about a quarter of the total cultivated area in Myanmar¹. In practice, however, tenancy was not totally eliminated, and tenancy still existed even after 1971².

The aim of the new Tenancy Act of 1963 was to help tenants by replacing the landlords under strict control³. The act was to cover all the farmland of the country, regardless of whether or not the Land Nationalization Act was in force. The renting of farmland was placed under the following strict control:

- In all cases of farmland to be rented, a landlord was to have no option as to whom the tenant would be, the local Land Committee being solely in charge of the matter
- Payment of tenancy rent in kind, was to be prohibited
- The upper limit of tenancy rent was to be fixed by law.

The Revolutionary Council tried to impose restrictions on persistent private landownership through a strict control of farm rent. In 1965, a further step was taken with amendment of the Tenancy Act, by which the taking or payment of farm rent was totally prohibited. That is, instead of fixing the upper limit of tenancy rent, a new provision was introduced whereby a tenant did not have to pay any rent to his landlord.

The Farmers' Rights Protection Law of 1963 protected the rights of all cultivators. Although the "Burmese Way to Socialism" aimed to nationalize all "productive forces", the agriculture sector was left almost intact. This policy reform confirmed again that the State is the ultimate owner of the land and it gives cultivators "the right to work" on the land as individuals. However, they were prohibited to buy, sell or mortgage it. Because of this policy, there were further land fragmentation and lack of improvement of land.

In the distribution of land, the Agrarian Committee tended to give priority to the poorest person in the village, thus affecting productivity since very often he did not have the requisite skills nor sufficient capital, including seed, draught cattle, and farm

¹ Mya Than and Nishizawa, 1990

² Hill and Jayasuriya, 1986

³ Saito, 1984

implements. The land policy, in effect, stressed equity rather than productivity. This reform, in essence, represented a continuation of the land reforms of the 1950s and its main thrust was to break up the landowner-tenant relationship in order to create new government-owner-cultivator relationship and, at the same time, to strengthen government control over farmers¹.

During the socialist era, it was reconfirmed that the State is, according to Constitution, the ultimate owner of the means of production. The socialist government recognized the rights of farmers to exercise (1) control rights (land use rights), (2) residual claim right (the right to obtain the residual value), and (3) disposable rights (the right to transfer the use right (land) to others². It could be assumed that the most important parts of the full private ownership were in practice reassigned to the individuals to a greater degree. From the viewpoint of property rights approach, it is very reasonable to categorize the agriculture sector as part of the private sector. Some small-scale businesses with the same property rights structure mentioned above were scattered among the trading, service and manufacturing sectors.

Myanmar's Socialism had its originality and never collectivized the agriculture sector. Agriculture was left in the hands of individuals. Ownership problems in Myanmar before economic reforms were, therefore, unlike those of other socialist or communist countries in which collective ownership and state ownership were more common. This was a very special nature of Myanmar's transition, as opposed to other countries of Asia as well as Eastern Europe. Myanmar had a clear role of the private sector even in the socialist economy but mostly concentrated in the agriculture sector as already mentioned above, and a few private-owned small-scale businesses scattered in the industry and service sectors.

By 1963, out of total registered farmland acreage of over 19 million acres, land which was affected by the Land Nationalization Act accounted for only more than 3 million acres or 17% of the total. In the remaining areas, the letting-out of land for

¹ Steinberg, 1981

² According to the constitution, the state was the ultimate owner of land, the full private ownership of land was not recognized. Therefore, the transfer (or sale) of the land use right would not be possible but the state or the society accepted the inheritance from relatives or family members through the traditional law or custom. With the inheritance custom, the farmers had, in real practice, the right to transfer (sell) the land use right by following the necessary official procedures.

tenancy, as well as the selling or buying of land persisted as before. When the Revolutionary Council took over in 1962, the nation's land problem was far from being solved. The main concerns of the government in the agriculture sector at that time were to redress the problem of landlessness and indebtedness, on the one hand, and to promote equity on the other.

The socialist government assigned its property rights or the use-right of land to individuals based on the equity or ownership concerns, not on the productivity. The State legalized the entitlement of ownership to private but constrained some rights from the bundles of rights which define full private ownership by various regulations.

Moreover, a new constitution was promulgated in 1974 and this 1974 Constitution confirmed that ownership of the land was vested in the State. However, the slogan of the agrarian reform in the military government changed from "Land to the tiller" to "Right to cultivate to the tiller" since the land belongs to the State.

The average farm size was declining due to inheritance and population pressure such that, the profit margin became smaller for cultivators as the compulsory sale of the agricultural produce (particularly paddy) to the state was introduced. During the period, agricultural workers were worse off than small farmers. However, during 1971 and 1972, as the free market price of paddy was raised, they were better off than small owner-cultivators because agricultural workers were usually paid in kind.

Although there was no data on indebtedness, it was estimated that 60 % to 80 % of the farmers were in debt. One reason was that government's credit was not enough to cover even the labor cost as the amount of credit was one third of the cost of cultivation. After raising the paddy price, the extent of indebtedness was not as acute as in the colonial days. Land fragmentation also has taken place all over the years due to weaknesses in the land policy and the law of inheritance. However, land-man ratio is still better than in neighboring countries.

The state became the landlord since it monopolized the rice export and cultivators have to sell a certain percent of their produce to the state at the government fixed procurement price which is much lower than the market price.

Market-Oriented Period (1988-2010)

Since 1987, the agriculture sector was the first to be liberalized by expanding the role of the private sector in domestic trading of agricultural products. The export of most agricultural products was opened to private trade, with the exception of rice and some major crops. The import and distribution of agricultural inputs such as seed and agro-chemicals were also liberalized. In particular, subsidies on fertilizer and pesticides were greatly reduced, and the private sector was allowed to play a role in the distribution of such inputs.

In addition, the private sector, including foreign entrepreneurs, was permitted to invest in the agriculture sector and was encouraged to develop large tracts of waste and fallow cultivable agricultural land. The tariff structure was also simplified and tariff exemption was granted as incentives to investors. Furthermore, among major economic reforms, land and agriculture sector reforms were undertaken for initiating institutional changes such as the establishment of land commission to ensure optimum use of land resources; abolishing price controls, reduction of compulsory delivery quota for paddy and measures for production expansion.

As during the socialist era, the state is still the owner of the land and can alter the tenancy whenever the state wants. The most serious problems from the viewpoint of property rights are yearly-contract tenancy practice and alternate land use rights¹. The first is that the farmer has to get land use right from the state annually and it has the direct influence upon the capital investment behavior. With short tenancy, the farmer has little incentive to put his money to the development of land because there is no possibility to get agreements for sharing cost of present investment with unknown future owners. The latter is that if the initial owner (farmer) of the land is not willing to cultivate the second or third crops, the state may assign the land use right to other persons for next crops. It has also negative effects on the capital investment of land development for the long-term perspectives because there is no possibility to negotiate with and get agreement from next owners for sharing the cost of the present owner.

As a consequence of these situations, sown acreage and yield per acre will probably get, not a significant or rapid improvement in the future. This system may cause

¹ Tin Win, 2000

a significant increase in the production (output) of agriculture in the short-term, as the same area of land can produce more output regardless of whether the marginal income (revenue) can cover the marginal cost.

It is, however, true that the improvement of private property rights in the agriculture sector can cause some improvements especially in sown acreage and production. Due to the nature of the agriculture, the rapid increase in yield per acre is very difficult to obtain. It largely depends upon the introduction of high technology as well as more clearly defined private property rights.

If there is no private property right, there will be difficulties to invest for the introduction of technology, as the benefits of business are not guaranteed for the owner to obtain wholly. The sown acreage and production are greatly related to the property rights, which can exercise upon the land. Less private rights upon the land cause the owners less attractive to expand the sown acreage because the marginal income of expansion of sown acreage did not cover the marginal cost. Less sown acreage definitely affects the production. Therefore the lesser degree of private property rights has direct influence upon the production.

There are still many constraints to realize the private property rights in a more efficient manner, especially in the case of land transfer because the State is still the owner of all lands. Therefore, it is hard to hold large acreage by cultivators to reap the benefit of economies of scale. As a result, the land holding of each household does not show any recognizable changes. According to official data, most of the cultivators are still working on the farm size of less than 5 acres; it constantly occupies more than 60% of the cultivator-households.

The government also allowed some private companies to hold a large area (thousand of acres) of agricultural lands, the wet lands or "Ye-net-kwin" that requires a larger amount of capital. This special permit also conveys the right to export the rice yielded from these lands as the government had also allowed the private sector to export rice since 2003. Therefore, these companies can export rice from their land, mostly operating by the cultivators. At present, the government enacted the Cultivable, Fallow

and Waste Land Management Law and Agricultural Land Law on 30 March 2012 according to Pyihtaungsu Hluttaw Act 10 and 11¹.

As the most attractive incentive for this permit is the right of rice export and if this kind of permit is expanded more widely to other kinds of land, there will be a strong expectation that many companies and entrepreneurs will join in the agriculture related businesses. Therefore, a rapid increase in both sown acreage and production can be expected in the intermediate term, as there are still large areas of cultivable wasteland and fallow land. Therefore, the well-defined private property rights in land ownership should be given first priority for the expansion of the agriculture sector for without the private property rights; it is difficult to expect a rapid increase in sown acre and production.

To be able to promote agricultural production by area expansion and yield, farmers need a suitable amount of capital to invest in land quality improvement, to utilize farm inputs such as high yielding varieties of crops, fertilizers, pesticides, and insecticides, to utilize modern farm implements such as tractor, pump, and tillers. Farmers can get required capital if they have the right to use land as a collateral and secured market for land.

3.2 Water and Irrigation Related Institutions

Myanmar has abundant water resources for irrigation and hydropower development with the estimated 1.323 billion cubic meters². Only about 6% of the water resources have been utilized for irrigation development. Moreover, the country has also ground water resources estimated at 495 million cubic meters per annum. Thus, the potential for irrigation development from these water resources is enormous. The bulk (91%) of all surface water resource withdrawals are used for irrigation with the remainder being used for domestic (3%) and industrial purposes (6%). Groundwater resources are mainly used for domestic supplies (51.4%), with a share of 47% being extracted by irrigation and some 1.6% taken by industrial users³.

As far as water policy, Myanmar Water Vision was formulated in 2003 in cooperation with UNESCAP, FAO and Irrigation Department with participation of all the

¹ The Mirror, 3 April 2012

² Tun Win, 2004

³ Tin Maung Shwe, 2011

stakeholders. Myanmar Water Resources Committee (MWRC) was established by the government in 2005. In order to effectively utilize the potential water resources mainly for agricultural purpose and to protect floods, Myanmar has been establishing irrigation facilities to increase agricultural productivity and to reduce the damages.

Colonial Period (1886-1948)

Construction of irrigation works for crop cultivation historically started since the days of Myanmar kings. Under the British rule, the canals built in Myanmar had been improved and new canals have been built¹. During this period, total number of irrigation facilities was 23 and total irrigated areas were about 1.5 million acres.

Parliamentary Democracy Period (1948-1962)

In the parliamentary democracy period, Rural Water Supply and Environmental Cleaning Organization was established in 1952 to supply clean water for rural people and to conduct environmental cleaning activities. During this period, 21 dams and tanks and 29 diversion weirs were constructed and total irrigated area was about less than one million acres.

Socialist Period (1962-1988)

. Irrigation works during the socialist period included many major projects and the Irrigation Department also began to introduce pump and ground water irrigation as new concepts. Total number of irrigation facilities constructed during 1962 and 1988 was 88, of which 34 were dams and tanks, 51 diversion weirs and 3 pump irrigation. Total irrigated area was about 1.4 million acres.

Market-oriented Period (1988-2010)

Since 1988, following the introduction of market-oriented economic liberalization measures, the Government put forward continuous efforts in the construction of dams and reservoirs and pump irrigation facilities throughout the country by utilizing large capital

¹ Mandalay Canal (1890), Shwebo Canal (1906), Mon Canal (1911), and Ye Oo Canal (1918), Kyangin, Myanaung and Ngawun embankments, the Bago-Sittaung and Twante Canal.

investment making use of the available domestic resources and expertise. The total beneficial area increased to 1.69 million ha (4.16 million acres) as of August 2010 and the irrigation projects completed during the market-oriented period were 233. Total irrigated area stood at 5.75 million acres and irrigation coverage also increased from 15.2% of sown area in 1988 to 16.9% in 2010¹.

Apart from the construction of dams and weirs, establishment of 322 river pump stations (131 electric and 191 diesel pumping) and 8,012 of tube wells were made for rural water supply and agricultural use and beneficial areas were 467 thousand acres and 98 thousand acres respectively. Consequently cropping intensity increased to over 170% in 2010². Most of the irrigated areas have been for paddy production. Among various types of irrigation, dam/weir/tank are about 43.2%, pumps are about 38.1% and wells are about 3.9% respectively³.

Despite main infrastructures of irrigation works being completed, distribution canals and water courses to farmers' field are still under construction. Renovation of the distribution canals of completed dams and reservoirs has also been delayed due to limitation of the maintenance budget. Extension and education activities in connection with efficient utilization of irrigation water to water users are also inefficient due to weakness of on-farm research and demonstration. There is great potential for expansion of irrigated areas by improving efficiency in irrigation.

The Government is striving hard to take opportunity of the country's water resources, through Water Resources Utilization Department (WRUD) and Irrigation Department (ID). WRUD was established on April, 1995, by merging Rural Water Supply Division of Agricultural Mechanization Department and Groundwater Division of Irrigation Department. The WRUD is responsible for the planning, design, construction, operation, and maintenance of pumping schemes. The main functions of WRUD are to increase the agricultural production, to promote the socio-economic of rural population, to supply crop water and drinking, and to introduce sprinklers and drip irrigation systems to farmers. The structure of WRUD is set up with six departments – Administration, Planning, Ground Water, Pump, Civil Works, and Procurement and Maintenance.

¹ Myanmar Agriculture at a Glance, 2010

² Ibid

³ Ibid

As a performance of the department, the construction of river pump irrigation projects has already established 83 electric pump sites and 182 diesel engine driven pump sites along the riverbanks for the beneficial area of 282 thousand acres. In the case of domestic water supply, 38 thousand numbers of water supplies for the 1.5 million populations had been conducted¹.

There have been some limitations in this area. The farmer beneficiaries contributing only K 1500 for the rainy season and K 2000 for the summer season toward the operation and management are too low to compare to the benefits of farmers achieving from high crop yield and cropping intensity. The higher contribution of farmers will help WRUD to build more irrigation schemes and to maintain irrigation schemes on a sustainable basis. Moreover, lack of sharing technical and financial assistance of the WRUD to the farmers for improving private irrigation programme and the increasing fuel price will be a great challenge to be able to support continuous demand of water especially in summer season.

ID is charged with four main tasks: (1) carrying out investigations and surveys for existing and currently implemented projects; (2) planning and construction of new projects; (3) perform operation and maintenance of existing irrigation, drainage and flood protection works; and (4) the provision of technical assistance to rural irrigation works and rural development.

To achieve the three objectives of the Ministry of Agriculture and Irrigation, the provision of adequate irrigation water is one of the five measures being undertaken. Then, five strategies are also adopted for the assurance of irrigation water for paddy and other crops such as building new dams and reservoirs; renovating the existing dams and reservoirs; building embankments and sluice gates; irrigating the land by pumping water; and tapping underground water resources.

Among the five strategies mentioned above, pump- lifting irrigation and ground water utility is to be undertaken by WRUD since 1995.

The Irrigation Department is responsible for the planning, design, construction, operation and management of gravity irrigation schemes (from dams and weirs), and flood protection and drainage schemes. The Irrigation Department has a large staff in the

¹ Tin Maung Shwe, 2011

MOAI and the government allotted the annual budget for current and capital expenditures for irrigation development, giving attention to the construction of new dams and irrigation scheme. It increased from about K 8,582 million in 1989-90, to K 17, 163 million in 2001/02 and to K 166 193 million in 2009/10 respectively. Furthermore, the WRUD's annual budget by the government is a rising trend with at highest of K 16,646 million in 2005 and it decreased to K 14,174 million in 2009 because of budget constraints¹.

The private sector is also engaged in irrigation development using various methods but the extent of coverage still remains low in comparison to the State's efforts. For the capacity building and training for irrigation, the Irrigation Technology Center established in 1989-90 has undertaken 216 training courses with a total of 6,317 participants. The Mechanical Training Center has provided 146 training courses in operation, maintenance and repairs of heavy machinery for 7,455 trainees.

However, the water tax and embankment tax (K 10/acre for water tax and 5 Kyat/acre for embankment tax, and K 10/acre for both irrigation as well as flood protection) were too low to be able to support the operation and maintenance cost².

The Irrigation Department has developed only 27.9% of total irrigable areas in Myanmar. The potential for developing irrigated areas is therefore still very large and presents a great opportunity to help promote sustainable agricultural development for Myanmar.

Regarding the revenue for water utilization, the Parliament Session of 1982 enacted the water and embankment tax law. It was noted that 1982 water tax was no longer adequate and subsequently in 2007 the Government reviewed the tax rate and revenue increased from 2007. Sudden raise of water tax revenue was observed from K 27.45 million in 2006 to K 1221.84 million in 2007. However the revenue severely decreased to 169.08 million kyat in 2008 due to non-payment by farmers and lack of effective supervision in the collection.

Presently the use of water per acre of specific crop is very high in some parts of Myanmar. Since the water tax is charged on a per acre basis, there is no incentive

¹ Tin Maung Shwe, 2011

² ibid

attached that could encourage farmers to save water. However, this system, while it is effective, is cost prohibitive farmers' current income level. For natural productivity, it might merit the Governments' consideration to provide the cost of ratification system in the budget.

There are some constraints in water supply and irrigation facilities such as climate change, collection of water tax, capacity building in the system, cost sharing of beneficences groups, private sector participation into the national development process, implementation of dam safety and mobilization and allocation of financial resources.

There is a great potential for future development of water in Myanmar. Currently less than 10 percent of the country's renewable water resources are being utilized. However the problem is that the society cannot efficiently manage for its sustainability.

The development of river pumping schemes has become a popular method of irrigation. The main advantage of this system is applicable for those areas where building dams and other structures are restricted. Farmers from coastal and delta areas widely use movable low lifting diesel pumps either owned by farmers themselves or rented.

On many schemes farmers do not pay the water tax voluntarily, which is why the staffs of ID get involved in monitoring farmers to make their payments. Presently the use of water per acre of specific crop is very high in some parts of Myanmar. Since the water tax is charged on a per acre basis, there is no incentive that could encourage farmers to save water. An alternative to this would be to charge water in volumetric basis which in turn can be integrated the network system development.

3.3 Research Institutions

Agricultural research and development (R&D) is important to develop improved agricultural technology and better crop varieties. According to the biotechnology revolution in agriculture, it is needed to consider institutional and investment trends regarding agricultural R&D. Besides an appropriate and dynamic system of R&D to promote the agriculture sector and its sub-sectors, there must also be an effective R&D system which is necessary for the promotion of increased and sustainable production to meet the food and related requirements of growing population.

In Myanmar, agricultural research institutions have been formed since the colonial period. Restructuring, expansion and upgrading activities have been performed with the policies and planning of the agriculture sector. At present, agricultural research is entirely the responsibility of the Ministry of Agriculture and Irrigation (MOAI).

Colonial Period (1886-1948)

The Agriculture Department of Myanmar was founded in 1906 and the Research Section was under this department. As research activities, breeding, experiments on crops, seed distribution, cultivation of variety seeds were carried out. Experimental Gardens were established throughout the country to increase crop production.

Especially, seed production was first developed during the British Era by establishment of the Central Seed Farms in Mandalay (1907), Hmawbi (1908), Sittwe (1923) and Myaungmya and Mudon (1923). Moreover, variety seed gardens were opened in Pwintphyu (1920), Padu (1914), Tatkhone (1914), Kyaukphyu (1923) and so on. The indigenous rice cultivars were well selected and distributed to the farmers. During 1921 and 1941, Myanmar was the largest exporter of the world using that indigenous quality rice.

A Board of Agriculture was formed and State Agriculture Schools were established during the period. There were 11 Agriculture Divisions and an Agricultural College was established in 1911 in Mandalay. And also, Agricultural Unions were established. Moreover, Agricultural Cooperative Societies were established to extend the agricultural education facilities in collaboration with Agriculture Department in 1911 and 2 year and 3 year Diploma Courses were opened. In 1924, an Agriculture College was established in Yangon and it was a branch of Rangoon University in 1938. Again, it was transferred to Mandalay University, under the Ministry of Education as a Faculty of Agriculture. Moreover, an Agricultural Science was founded in 1923 in Pyinmana, Mandalay Division in Upper Myanmar.

Parliamentary Democracy Period (1948-1962)

In 1954, Agricultural Research Institute (Gyogone) and Central Farms (then Agricultural Research Farm) under the Agriculture Department was established in

Yangon. Then, Agricultural Research Institute was renamed as the State Agricultural Institute. The Central Farms opened short courses to distribute and practice agricultural technologies to farmers. Moreover, Agriculture Department issued Cultivator's Pamphlets, Agricultural Bulletins, Agricultural Calendar and Agricultural Surveys. Seed production was continued to be distributed from Central Farms (then Agricultural Research Farms).

Socialist Period (1962-1988)

The Agriculture Department was restructured and reorganized in 1969. Again, it was formed as an Agricultural Corporation in 1972 and it included Agriculture Department, Land Use Department and Agricultural/Land and Rural Development Corporation. After 1972, Agricultural Research Department, Land Use Department, Agricultural Education Department, Seed Department and etc. were formed under the Agricultural Corporation. In 1965, Agricultural Research Institute (ARI) was separated and, extended in Pyinmana in 1971. Sub-division of Agriculture Research Department was renamed to Applied Research Division and then to Seed Division after 1965.

The Rice Research Institute was established in 1973. Moreover, the government implemented the four year plan for Strengthening of Agricultural Research Institute (ARI) in collaboration with FAO, UNDP in 1974/75. ARI was transferred to Yezin, Mandalay Division in 1971, which was 250 miles north of Yangon to conduct research on other crops.

Before 1977, improved seeds were distributed by two agencies, the Department of Agriculture and Agriculture and Rural Development Corporation (ARDC). Since then, the seeds produced from the seed farms were not sufficient to meet the needs of the whole planted area. After launching the Special High Yield Paddy Production Project in 1977, the demand for quality seeds led to the formation of properly organized seeds multiplication program. As a result, a series of seeds projects funded by various international organizations were developed- Seed Development Project Phase I (1978-1984) by World Bank, Maize and Oil Seeds Production Project (1982) by USAID, Quality Seeds Production Project (1984-1986) by FAO/ DANNIDA and Seed

Development Phase II (1986-1994) by World Bank/ FAO. These projects brought great supports in terms of 6 seeds laboratories, 17 seeds processing plants and trainings.

After the completion of seed development projects, Seed Division of Myanmar Agriculture Service (MAS) took the responsibility in cooperation with Extension Division and Central Agricultural Research Institute (CARI). Central Agricultural Research and Development Centre and Vegetables and Fruits Research and Development Centre were established in 1984 and 1986 respectively. CARI is a research center of MAS and is responsible for research and development of cereals, crops, peas and beans, oil crops and, fruit and vegetables. CARI is the largest and the oldest among the research institutions in the country. It was founded in 1954 in Yangon and was transferred to Yezin, Mandalay Division in 1971.

Market-Oriented Period (1988 – 2010)

Majority of R&D activities were carried out by the Central Agricultural Research Institute (CARI) of the Myanmar Agriculture Service (MAS), with the balance handled by Seed Department (SD), Plant Protection Department (PPD), Land Utilization Department (LUD) and Central Agriculture Research and Training Center (CARTC) of MAS and Yezun Agricultural University (YAU).

Several State Enterprises (SEEs) were organized in 1994 and these SEEs took over the R&D function for their assigned commodities, including the cases of cotton and mulberry by the Myanmar Cotton and Silk Enterprise (MCSE); sugarcane by Myanmar Sugar Enterprise (MSE); jute, kenaf and other fibre crops by Myanmar Jute Enterprise (MJE); and rubber, oil palm, cashew and other perennial crops by Myanmar Palm and Cashew Enterprise (MPCE).

The CARI has focused its research on crop breeding, varietal development, agro-techniques, component technology, and rice-based cropping systems. Demonstration cum trials and adaptive researches were established in 18 CARI outreach stations. CARI has been producing nucleus and breeder seeds of priority crops, passing these on to the Seed Department for multiplication. Using 34 seed farms, the SD multiplies the breeder seeds into foundation seeds then registered seeds with the assistance of the Agricultural Extension Department (AED) on farmer co-operators' fields.

The CARI has released 59 rice varieties for different agro-ecological zones, 12 open-pollinated varieties of corn, 5 hybrid varieties of corn, 6 wheat varieties, 14 sorghum varieties, 6 sesame varieties, 2 sunflower varieties, 1 hybrid varieties of sunflower, 3 black gram varieties, 5 green gram varieties, 4 pigeon pea varieties, 5 chick pea varieties, 3 soybean varieties and 3 cowpea varieties. Hybrid rice seed production is also in progress at CARI, with commercial rice hybrid seeds which are introduced in 2004/05.

Up until 1994, before the establishment of the SEEs, the CARI had released 4 long staple cotton varieties, 3 short staple cotton varieties, 12 jute varieties, and 3 sugarcane varieties. Since establishment of the SEEs, the MCSE had released 13 new cotton varieties, MSE released 15 new sugarcane varieties, and MPCE has released some rubber, oil palm, and cashew varieties.

The SD also made demonstration cum trials and agro-techniques researches on 34 seed farms while PPD, LUD, and CARTC has conducted plant protection, agro-techniques, fertility, soil conservation researches on priority crops. The SEEs were also conducting R&D activities on their respective crops on breeding, varietal improvement, pest control, and agro-techniques. YAU has contributed 145 research papers since 1992.

In general, R&D activities were supportive in varietal development, although most of these were through introduction and selection. Biotechnology is still in its infancy in Myanmar. Seed multiplication or quality seed production in Myanmar is still weak. Except for cotton and corn, total amount of seed produced by the SD and SEEs account for less than 1 percent of the crops grown in Myanmar. On the other hand, the cotton seeds produced by the MCSE require improvements in purity and homogeneity.

Research on post harvest technology on rice and other crops were carried out by the Planning, Finance and Post-harvest Technology Application Center (PTAC) of the Ministry of Commerce, covering storage, pesticide residue, aflatoxin and other quality aspects. Some researches on machineries modification were conducted by the Agricultural Mechanization Department (AMD).

The budget allocations for agricultural R&D have been quite low, particularly relative to the contribution of agricultural commodities to the economy. The ratio of the

budget for rice R&D relative to rice crop value was 0.0005, while for pulses was 0.0012, oilseeds 0.0017, sugarcane 0.35, and for perennial crops 0.52¹.

The budget for 2009/10 was Kyat 43.25 million and the current budget was K 450.44 million. Totally K 493.7 million was used during a year, in which K 11.54 million was used for research. Budget sharing for the research was 2.3% of in 2009/10².

An observer of the SWOT analysis pointed out that the Research and Development (R&D) institutions in the agriculture sector had generally good infrastructure like research farms and sufficient number of staff. However, most of the Research and Development and Extension (RDE) institutions had: (1) limited numbers of highly trained personnel; (2) limited budget; (3) low salaries and thereby inadequate incentives; (4) inadequate libraries, laboratories, farm facilities and equipment; (5) weak collaboration and coordination among departments and institutions; (6) limitations in research findings and recommendations for in relation to specific agro-ecological and socio-economic conditions; and (7) limited production of quality seeds or hybrid seeds³.

3.4 Agricultural Extension and Training Institutions

Agricultural extension is a service or system that assists farm people, through informal educational procedures, in improving farming methods and techniques, increasing production efficiency and income, raising their level of living and lifting social and educational standards of rural life.

In practice, agricultural extension is for farmers who are taught improved farm practice on the farm and improved ways of living at their homes through extension methods such as group discussions, demonstrations, exhibitions, workshops, visits to homes, farms, etc. The purpose of agricultural extension is to remove difficulties and/or to help solve problems of farmers. So, it is obvious that agricultural extension has played an important role in improving the quality of life of the farm and rural populations through agricultural development.

¹ Maung Mar, 2004

² Tin Maung Shwe, 2011

³ Maung Mar, 2004

New technologies and varieties emanating from the R&D system need to be disseminated by the extension system. The feedback from the farmers and other users should also be gathered for use by the R&D system.

Colonial Period (1886-1948)

Agricultural research and extension-type activities were first introduced in Myanmar with the establishment of the Department of Agriculture (DAB) in 1906, but agricultural extension service was not properly organized due to lack of trained personnel at township and village levels¹.

The main objective of the establishment of DAB was to increase the exportable crops. Under the British rule, the British government realized that Myanmar had much cultivable yet unused land, and it organized capital and technological investments in rubber estates. Subsequently, the British colonial government in Myanmar also sponsored extension-type activities for other crops such as rice, sugarcane and peanut. During this period, cultivation of rice area and production were increased.

Most of the agricultural experiment stations had been established by the British government with special interest in export crops, such as Hmawbi and Myaungmya Rice Experiment Stations, established in 1906 and 1907 respectively.

Parliamentary Democracy Period (1948-1962)

After independence, the government of Myanmar strengthened the research and extension arms of the DAB in 1954 with the formation of extension service at the national, state and divisional, township and village levels. The agricultural extension service of DAB was the only one in existence at that time. Extension agents could pay attention only to some selected crops such as rice, sesame, groundnut and pulses². This was supported by Kelsey and Hearne (1963) who noted that a "well organized" Burmese Extension Service was organized in 1954³.

The Agricultural and Rural Development Corporation (ARDC) was established in 1954 under the Ministry of Agriculture and Forests. ARDC was concerned with the rural

¹ Tin Hlaing and Tin Maung, 2004

² Ibid

³ Mya Maung, 2004

agricultural development. Its major functions were extension activities to further development of important crops, especially industrial crops such as jute, cotton, sugarcane, tobacco, mulberry, and others such as horticultural crops and medicinal plants. The corporation was responsible to provide adequate supply of agricultural inputs such as fertilizers, pesticides, credit, advanced purchases, quality seeds, etc. to construct small scale irrigation networks; to enhance land reclamation and improve rural water supplies; to foster livestock breeding and marketing and to introduce mechanized farming system.

The Agriculture Department took responsibility for routine work such as agricultural data collection, enforce in standard weights and measures, seed farms and agricultural experiment stations. The extension activities of the Agriculture Department were confined to a few exhibitions, generally held in urban areas for special occasions and to the distribution of seeds and pesticides.

Myanma agricultural extension service has practiced continuously the traditional extension approach, particularly more on individual contracts with the farmers. It has tried to improve its work by adopting the new extension concept and approach. Before 1962, the transfer of technology by extension services was supported by various political and administrative bodies.

The extension service was formed with different layers of organization i.e.: National level, State and Division level, District level, Township level and the Village level. The national and state and divisional levels are responsible for the formulation of policies, planning, training, monitoring and evaluation, while the downward extension services are engaged in most of the rural development programmes.

Socialist Period (1962-1988)

During the 1960s, the "Green Revolution" campaign was launched in developing countries with technical and financial support of FAO, bilateral and multilateral donors and NGOs. In Myanmar, until 1970s, the increased production of agricultural crops was mainly achieved through the expansion of horizontal growth by land reclamation and land redistribution, whereas vertical growth of crop production remained stagnant. The ministry, knowing the difficulties and problem of technology of evolvement at the

research and the slow transfer of technology to the farmers by extension service, reorganized the research and extension services of the country.

In the research areas, the Central Agricultural Research Institute and the other important research farms and stations were reconstituted and strengthened. All the same, for the effective transfer of improved technology, new extension approaches were introduced. First, Training and Visit (T&V) system was introduced in 1974 as a pilot programme of the World Bank assisted land reclamation project townships in Ayeyarwady and Yangon Divisions. Secondly, the Special High Yielding Production Programme was launched as a pilot project with rice in Yangon Division in 1977. Beginning from 1978, the programme was expanded for the important crop varieties (rice, cotton, jute, groundnut, sesame, sunflower, sugarcane, maize and pulses) in all the favorable townships of the country.

T&V Extension System was introduced in 1974 in five townships of Ayeyarwady Division and three townships of Yangon Division. The T&V system ensured systematic transfer of technological know-how from research scientists to subject matter specialists of the extension services of the project. The subject matter specialists again transferred the know-how to different levels of extension agents during regular training sessions and workshops, and discussions, questions and answers were made for the problems they encountered during the field days and visit to the farmers.

However, the transfer of technical know-how to the farmers was usually made one impact point at one time. For each demonstration and field days, the cultural practices to be done was explained and transferred at that time only. The choice of crop varieties and planting techniques were entirely at wishes of the farmers. In fact, the T&V Extension System is a scientific and systematic approach of extension strategy. However, the transfer of technology from the research stations to the farmers took a number of steps and time, until farmers were receptive and participating in the programme. Therefore, it was considered that transfer of know-how was slow even though it was systematic and satisfactory. Moreover, the T&V system was not suitable with the political system; the Burma Socialist Programme Party (BSPP) and its subsidiary institutions favored the mass participation in agricultural production. Therefore, the T&V

system was not extended to other regions of the country and it was stopped after the completion of the World Bank assisted projects.

Special High Yielding (SHY) Production Programme began in 1977 on rice. Phalon village in Yangon Division was chosen as the pilot project site; training facilities and a demonstration-cum-trail farm was established to test a package of the improved rice production technology by the new extension approach which was later called Whole Township Special High Yielding Production Programme. The principal strategy of the Programme was the speedy transfer of technology contained in the package of production impact points. The impact points were formulated jointly by researchers and crop specialists of the extension service. Cultural operations of rice production as contained in the technology package were carried out by the farmers and trainees under close supervision. The township level extension officers and village level extension workers from the planned programme townships were assigned at the training center and participated in the training sessions, workshops and practical applications of rice cultivation.

The new extension strategy proved to be effective and successful. Therefore, the SHY programme was extended to most of the ecologically favorable townships in the subsequent years. HYVs released by IRRI and local research stations were well accepted by most farmers; the cultivation of HYVs combined with correct cultural practices and high inputs gave a strong impact to increase rice production of the country significantly. Once again the stagnated rice production rapidly took an upward trend. The increase in HYVs areas in 20 years time can be seen in the following Table 3.6.

Table 3.6 Sown Acreages of High Yield Variety Rice

Year	HYVs area ('000)	Total Area ('000)	HYVs (%)
1968	8	12,193	0.1
1976	1,038	12,858	8
1981	5,160	12,668	41
1987	6,113	11,968	49

Source: Tin Hlaing, 2004, Myanmar Academy of Agricultural, Forestry, Livestock and Fishery Science.

Moreover, in 1972, the government of the Socialist Republic of the Union of Burma reorganized all departments and corporations in order to cope with the new constitution. This resulted in the establishment of Agriculture Corporation (AC) by combining three former government agencies: DAB, ARDC, and Land Use Bureau. The newly established Agriculture Corporation has continued to perform the extension services of both of the former DAB and ARDC.

The new extension system was also tested on other important crops in 1980. As it proved applicable, the introduction of HYVs associated with intensive planting techniques and higher use of inputs appreciably raised the yields of these selected crops as evidenced below:-

Table 3.7 Average Yield of Selected High Yield Variety Crops

(Kg/ha)

Crop	1969-70	1989-90
Paddy	1,705	2,916
Wheat	555	1,258
Maize	689	1,624
Sorghum	304	810
Groundnut	744	932
Sesamum	153	243
Sunflower	415	855
Cotton	408	829
Chick pea	483	817
Green gram	275	537
Black gram	401	1,003

Source: Tin Hlaing, 2004, Myanmar Academy of Agricultural, Forestry, Livestock and Fishery Science.

In evaluating the impact of the new extension strategy of SHY programme, it was considered that it was a successful system, which attributed for an effective transfer of technology to the farmers. However, there was the involvement of the mass organizations like Peasant Organization, Socialist Party and Peoples' Council. The farmers' acceptance and compliance was mobilized through mass participation. This is one of the important

differences between SHY program and T&V system, because T&V system usually favored the participatory approach of the farmers.

The Selected Concentrative Strategy (SCS), a similar approach to T&V, was laid down in the selected special high yielding rice production areas in 1978. Consideration for the selectivity in the program was focused on the locality, rice variety, extension personnel and management. Under the concentration strategy, extension personnel were assigned to a clearly defined area and job. The SCS was successful during that time.

The Green Revolution started in 1978 known as "Special High Yielding Crop Production Programme" which was rapidly adopted by 72 townships in 3 years. From then on, the technology gradually spread throughout the whole country. Since then, the system was firmly rooted and technology diffusion based on farmers' participation for sustainable agriculture was distorted.

Market-Oriented Period (1988 -2010)

When the Market Oriented Economic System was introduced by the State Law and Order Restoration Council Government in 1989, the extension system changed gradually with more active participation of the private sector.

In 1989, Agriculture Corporation was reorganized as Myanmar Agriculture Service (MAS), but its former functions of research and extension remained unchanged. In 1992, the Ministry of Agriculture and Forests was divided into two separate ministries as Ministry of Agriculture and Irrigation and the Ministry of Forests. In 1994, four new crop organizations namely Myanmar Cotton and Sericulture Enterprise (MCSE), Myanmar Sugarcane Enterprise (MSE), Myanmar Jute Enterprise (MJE) and Myanmar Perennial Crops Enterprise (MPCE) were established to strengthen crop production, research and extension of these particular crops. However, these new enterprises did not have well organized properly managed and well-trained technicians for extension services. These four organizations were reorganized again as Myanmar Industrial Crops Development Enterprise (MICDE) in combination with Myanmar Farm Enterprise (MFE) in 2006/07.

In 1992, new agricultural organizations were constituted under the Ministry of Agriculture and Irrigation with the aim to promote the extension activities for increased production of respective crops. However, Myanmar Agriculture Service remained as the

principal organization for research and extension of most of the crops varieties, and has the largest extension service in the entire country with established research stations, central farms and seed farms.

The extension service under Myanmar Agriculture Service was located at different levels of the administrative structures of the country – national Level, State and Division level, District level, Township level and village tract level. The new agricultural enterprises also have their own research and extension services for the respective crop varieties, but the services and activities are confined only to the respective crop regions. The plans, programmes and activities of these agricultural organizations are coordinated by the Ministry to lessen and avoid the duplication and complication in the field activities. The extension system under different agricultural organizations is the same.

In Myanmar, like in most countries, Yezin Agricultural University (YAU) is a strong source of agricultural technological information. The YAU is carrying out its own research and extension programme; the academics and scientists of the university conduct research projects and extension activities apart from the teaching profession. In this regard, it is found that the budgetary provisions are not sufficient for the intensive research and extension programmes. Therefore, some of the research and extension projects are partially supported by Myanmar Agriculture Service (MAS) and other agricultural organizations. Given adequate financial and other suitable support, YAU can perform research and extension programmes and activities much more than the present situation, and it can contribute its experiences for the crop production development of the country.

Now, extension activities which had been used since 1970s are still in practice and it is considered that the strategy is more or less inclined to the socialist system. In this regard, it may be more sensible to recommend and introduce a more modern, scientific approach of extension system under the market-oriented economic system of the country. The recent extension system is the mixture of T&V system and SHY programme. In this system, the impact points contributing the crop yield are also applied.

The Agricultural Extension Division is the largest division in terms of staff numbers under the Myanmar Agriculture Service (MAS). The total staff numbers of MAS is 18,615, out of which 11,081 are at Extension Division in 1988. The Extension Division

is mainly advisory, transmitting the research findings of the Research Stations to farmers.

The major functions of the Extension Division are:

- (1) implement the annual production-oriented agricultural plan set by the Ministry of National Planning and Economic Development
- (2) distribute input supplies to the farmers
- (3) distribute quality seeds in coordination with research division/seed division
- (4) provide extension education to farmers
- (5) encourage farmers to expand cropping area
- (6) conduct training for extension workers and farmers

To carry out these functions the Extension Division has been assisted by:

- (1) State and Divisional Managers at State and Divisional level
- (2) Township Managers at township level
- (3) Village Tract and Village Managers at the village level.

A village extension worker takes charge of a village tract or village with 3,000 to 6,000 acres crop land depending on the locality, while a Village Tract Manager supervises the work of 10 Village Managers who are in direct contact with the farmers. The latter are the "front line worker".

Extension Program Delivery Methods are: traditional method, training and visit (T&V) extension system, the Whole Township Special High Yielding Production Program (SHY program), and farming system research and extension. Recently, agricultural extension was carried out by 11 organizations under the MOAI, 4 under the Ministry of Livestock and Fishery, 3 under the Ministry of Forestry, and one institution under the Ministry of Commerce.

Agricultural extension in crops has been mainly carried out by the Agricultural Extension Department (AED) of the MAS. Some extension activities such as training, seminars and workshops were carried out by the CARI and CARTC; fertilizer and soil conservation techniques by Land Use Department; and plant protection techniques by Plant Protection Department of MAS. The AED focused on extension activities on rice, cereals, pulses, oilseed crops, culinary crops, fruits and vegetables, with major emphasis on rice. The MCSE handled extension in cotton and mulberry. The MSE was responsible for sugarcane extension; MJI for jute and kenaf extension and MPCE for extension in

rubber, oil palm, cashew nut, and other perennial crops. The YAU and State Agriculture Institutes implemented extension activities in nearby villages as an adjunct to their teaching. The ITC carried out irrigation training programs, while the AMD maintained 99 tractor stations throughout Myanmar.

In Myanmar, several types of extension systems were practiced like the Training and Visit (T&V) system under the World Bank-aided Paddy Land Development Project, SHY program or WTRPP and WTCPP programs between 1975 and 1988. In recent periods extension methods were a mix of T&V and SHY methods. Extension activities were carried out through: (1) special crop production zones; (2) block-wise crop production areas; (3) outreach stations; and (4) on-farm trails. Farmer's Field School (FFS) methods were also used as participatory approaches gained favour.

The limited extension budget was used mostly for agriculture, allocated as follows: (1) MAS: 4% - 6 % of the total 2000/01 and 2009/10 budget; MCSE: 8% - 9%; (3) MSE: 2% - 11%; (4) MPCE: 0.8% - 1.5%. This expenditure was equivalent to K 90 per acre of rice, K 411 per acre of cotton, and K 872 per acre of sugarcane. The MAS received the lowest extension budget per acre. Since rice is the most important crop, it should receive a greater budget allocation.

By the late 2006, 14 institutions were formed under the MOAI. Among them, Myanma Agriculture Service (MAS), Myanma Farm Enterprise (MFE), Myanma Cotton and Sericulture Enterprise (MCSE), Myanma Sugarcane Enterprise (MSE), Myanma Jute Industries (MJI) and Myanma Perennial Crop Enterprise (MPCE) are mainly responsible for the development of technologies and the subsequent transfer of appropriate agro-technologies to farmers. They have established their own extension departments for various specific crops. The extension department has two main functions. The first one is to transfer appropriate and adaptable agricultural technologies to the farmers. The second one is to collect information on field problems encountered by the farmers and to find out the solutions in collaboration with research division.

An analyst using the SWOT (Strengths, Weaknesses, Opportunities, and Treats) analysis of extension-related institutions in the agriculture sub sector indicated that there have strengths in human resources; most of the institutions have sufficient number of extension personnel. The constraints faced are similar such as low salaries and incentives,

Limited highly trained personnel and limited extension budgets. Other constraints include: (1) limited mobility of Village Extension Managers (VEMs); (2) VEMs assigned additional functions other than extension; (3) emphasis on rice; (4) lack of localized recommendation; (5) lack of modern technical know-how; (6) lack of proper seed program; (7) sugarcane harvesting seasons not synchronized with best planting season due to milling requirements; (8) some 40 % of rubber plantings due for replanting, while the high labor requirements in the soaking and peeling the jute and kenaf fiber has hindered the expansion in these crops¹.

The number of highly trained personnel is limited in all crop divisions and disciplinary divisions of CARI. There are very few PhD in priority crop divisions like rice, cereal crops, pulses, oil crops, fiber crops, and sugar crops divisions. The divisions concerned with fiber crops, pulses, and sugar crops divisions do not even have personnel with MSc. degrees.

To contribute to HRD in R&D, the CARI of MAS and the SEEs conducted trainings, seminars and workshops. Research staffs were needed to be upgraded through training at the YAU and abroad as opportunities became available. Extension staffs from MAS, MCSE, MSE, MJI, and MPCE were given pre-service and in-service training at CARTC and at their specific training centers.

The number of extension personnel is highest in the MAS. Crop area coverage per extension staff was less than 1,000 ha. for all institutions in the agriculture sub sector. The ratio of agriculture technicians (including all with at least university degrees) was only 31 % of total extension staff of the MAS.

3.5 Farm Implements Related Institutions

Farm mechanization is one of the important factors to agricultural development through expansion of agricultural land, multiple cropping and increasing yields. Especially, transformation of agriculture from tradition to commercial farming depends greatly upon utilization of farm implements such as tractors, pillars, ploughs, power tillers, reapers and threshers, hydro-tillers and etc. With improvement in technology,

research and development, and capital, farm mechanization is the driving force to development of agricultural production through saving time, man power and wastes.

Colonial Period (1886-1948)

During the colonial period, there was no utilization of machines and equipment in agriculture. There might be availability of draught cattle and cheap labor at that time. The British government discouraged farm mechanization, rather than established in agro-related industry such as rice mills for export quality of rice with the purpose of benefits for their foreign rice marketing companies.

Parliamentary Democracy Period (1948-1962)

After independence, the government tried to initiate the utilization of machines and equipment in agriculture. Firstly, Mechanization Board under the Agriculture and Forest Ministry was established in 1949. Then, Agricultural Mechanization Department (AMD) was established as an Agricultural Engineering Branch under the Department of Agriculture in 1951. Since then the government started mechanized agriculture by means of procuring tractors abroad and establishing tractor-hiring services to private farmers from 12 tractor-stations in selected townships. At the same time, temporary 5 Tractor Driving Training Schools were also founded in five townships for growing number of tractors. In 1961, 429 wheeled-tractors and 85 crawler tractors were in operation.

During the parliamentary democracy period, the country faced with problems relating to the inadequate draught cattle, decreasing production and waste of agricultural products due the effects of WW II. On the other hand, utilization of farm implements was not effective due to reconstruction and rehabilitation of the country. Thus, it was very weak in utilization of farm machinery for cultivation in the whole economy.

Socialist Period (1962-1988)

Under the Revolutionary Council period, the government in collaboration with Burma Socialist Programme Party (BSPP) tried to develop the agriculture sector through different measures. One of these measures was to utilize modern agricultural equipment. The government made agricultural mechanization scheme through distribution of

machineries, production of farm machineries adaptable to the country's agricultural land for land expansion and development and tilling work in planned cropped areas.

With increase demand for hire services in 1962, the government decided to annually procure 1000 wheeled-tractors each for both the government sector and the cooperative sector. Further, the Engineering Branch was recognized as the Agricultural Mechanization Project and transferred to the Agricultural and Rural Development Cooperation (ARDC) in the same year. In 1968-69, selling of agricultural machineries to village co-operatives and farmers was initiated to enhance and promote mechanization with five year installment basis.

In 1972, the government formed Agricultural Mechanization Department (AMD) which was under MAS and distributed more than 4000 tractors to newly formed village level agricultural co-operatives in installment basis up to 1980-81. Again, ADM was restructured in 1984 and the government sold machines with the outright sale. However, there were so many defaulters who failed to make repayment and tractors were taken back by AMD. In 1988, tractors and related equipments such as power tillers, threshers and water pumps were sold by AMD to the private and farmers to speed up the farm mechanization and to relieve the burden on the State.

As the government implemented the 20 Year Long-Term Plan during this period, increase in agricultural production was important for the food security in the Plan. To achieve this objective, farm mechanization was encouraged through the extension of tractor stations and production of tractors. Tractor stations increased from 20 in 1962/63 to 88 in 1987/88. Likewise, number of tractors increased from 1,391 to 2,502 during this period. Apart from utilization in cultivation, land development and preparation had been undertaken by the AMD.

Market-Oriented Period (1988-2010)

Under the market economic system, in addition to the state sector, private sector participation is increasing in utilization of the farm machineries and equipments for various activities of agricultural production. Increased cropping intensity has extended the use of machineries in agriculture from land preparation to harvesting and drying.

Required machineries are being produced and assembled locally or imported for distribution to farmers.

Development works of agricultural land includes: reclamation of fallow and culturable waste land; development of farmers' embankment and paddy-fish integrated farming in deep water areas; and protection of soil erosion and development of terrace farming in high-land and slope land areas. Land consolidation is also being undertaken in the existing agricultural land with proper drainage, irrigation and farm roads. Apart from the traditional small-scale crop cultivation, development of modernized large scale agricultural business by the private sector is encouraged.

The main objective of the land development scheme is for the emergence of new agricultural land in flooded areas, deep water area and existing fallow, waste and virgin land where the present productivity is low and the cost of land reclamation is rather high. Private sector national companies and associations are encouraged and granted rights to develop these areas for the cultivation of paddy, pulses, oilseeds, industrial crops, rubber, oil palm, and etc.

During this period, the AMD also took responsibilities for farm mechanization with the main objectives which are;

1. to provide tractor hire services to farmers
2. to produce small farm machineries and equipment for sale
3. to research, develop and utilize small farm machineries coordinating with international agencies
4. to serve land consolidation for mechanized cultivation
5. to reclaim lands for cultivation
6. to disseminate technology regarding operation, maintenance and post-harvest technologies.

Nowadays, there are two ministries that are producing agricultural machinery: the Ministry of Industry (2) and the Ministry of Agriculture and Irrigation. The Ministry of Industry 2 is responsible for producing tractors, power tillers, threshers, disc harrows, disc ploughs and machine parts. The MOAI is responsible for producing power tillers, reapers, threshers, trailers and machine parts. At present, there are 99 tractor stations (retail outlets), 5 machinery factories and 1 farm machinery plan under the Agricultural

Mechanization Department of MOAI. Moreover, there are also several small private manufacturing enterprises that are producing farm implements for sale and distributing them.

Efforts are being made to totally eliminate the traditional way of threshing paddy on the threshing floor, with the introduction of mechanical paddy threshers. Moreover, 24 model mechanized villages were established to demonstrate the farmers on benefits of farm mechanization. Farm mechanization has benefited the farmers in terms of time saving, labour saving, and human energy saving. In addition, it has contributed to increased cropping intensity of the country. Cropping intensity has increased from 119.6% in 1988/89 to 170% in 2008/09¹. As a linkage with others, the co-operation and co-ordination of AMD and MAS, other enterprises of MOAI and the private sector used to work together when it comes to conduct demonstration of new mechanized products in the field operation.

The acreage of land prepared by tractors and power tillers hired by AMD at various stations reached 5.14 million acres in 1999-2000 out of 12 million acres cultivated land. During 1997-2000 extension of cultivated soil by AMD was 49,046 acres for the private sector. On the other hand, land development by AMD reached 26337 acres during 1997-2000. Demonstration on repair, maintenance and operation of farm machinery was conducted in all States and Divisions. Tractor operator training course for farmers and other organizations was made at various States and Divisions.

However, there are some weaknesses in implementation by AMD. The tractors from extension tractor rental service are already too old to work effectively and efficiently. Many farmers prefer to use private service because of their flexibility and convenience for farmers even though private sector charges about two times of AMD harrowing rate. The shallow tillage made by the hired old tractors in extensive land of pulses and summer crops caused the uneven establishment poor growth thus resulting low yield.

On the other hand, those resource poor farmers who till the soil with their bullocks could not manage soil preparation in a hurry to be able to keep the residual

¹ Agriculture at a Glance, 2010

moisture within the limited time for second crop immediately after the harvest of rice. This area of study is needed for R & D of how to help those farmers.

Although power tillers, reapers, threshers and hydro-tillers are being produced since 1993, the prices of the farm implements reach beyond the budget limit of the majority of farmers. This problem will be related to other social factor farm incomes, reliable market and trade policy of the government. In reality, farmers who can afford prefer to use Chinese made farm machineries, which is much cheaper than domestically produced machineries. Utilization of machineries and farm implements is shown in Table 3.8.

Table 3.8 Utilization of Machineries and Farm Implements

(’000 Number)

Particulars	1995/96	2000/01	2005/06	2009/2010
Tractor	9	11	11	12
Spike harrows	2834	2987	3126	3163
Inter cultivator	132	156	179	183
Plough share	2758	2873	3018	3093
Rotary harrow	435	518	571	579
Other harrow	411	452	479	490
Seed drill (harrow)	71	83	93	95
Seed drill (plough)	14	17	21	21
Water Pump	72	142	179	199
Power tiller	17	57	97	140
Harvester	4	3	3	3
Thresher	6	19	29	37
Combined harvester	1	1	0.1	0.16

Source: Ministry of Agricultural and Irrigation, Settlement and Land Records Department.

As can be seen in Table 3.9, in utilization of farm implements, the hiring from AMD decreased and farmers used more tractors of their own. Moreover, utilization of power tillers by farmers increased. As a result, total tillage area also increased.

Table 3.9 Utilization of Tractors and Power Tillers

Particulars	Unit	1995/96	2000/01	2005/06	2009/2010
Tractor	Number	7,948	8,687	9,773	10,110
- AMD		2,820	3,151	2,873	1,772
- Owned by Peasants		5,128	5,536	6,900	8,338
Power Tillers owned by Peasants	Number	17,000	49,473	100,000	13,2730
Total Tillage Area	'000 acre turn	-	-	4133	8897

Source: MOAI, AMD.

Since most of the important mechanism parts of a farm machine of AMD still rely on imported materials, the price becomes higher. The resource persons to develop those sophisticated mechanisms are still really limited as well. The quality of farm machines produced by AMD is still needed to be improved compared to those imported ones and the spare-parts should be available conveniently close to the farmers.

Seeders for upland crops are the most essential tools for the farmers. To reach to the proper soil depth of the seeds to escape from the intense surface heat and to finish the seeding process in time without loosing soil evaporation in the dry land farming, the appropriate seeders for specific crops are badly needed.

The opportunity of the majority of farmers is transformation of current traditional agriculture production to mechanized farming because mechanized farming can save manpower, investment and time. So is the opportunity of AMD as well because since AMD can expect great credit for doing so as well. Although the plan by MOAI is to expand mechanization to cover 63% of crop land by 2030/31, it is hampered by the high cost of machinery, the limited supply of machinery (both imported and domestically produced) and the lack of adequate demand analysis. The lack of capital was a major constraint for farmers waiting to purchase agricultural machinery. Most farmers cannot afford to purchase machinery outright, and are either forced to form groups with other farmers or rent machinery from private contractors. There were few financial institutions providing loans for equipment purchases. The MADB, a State-owned bank, was unable

to generate enough capital to extend their lending products to sufficient number of farmers, particularly for equipment purchases.

Although the AMD started extension tractor rental service in 1968, it was not possible because the tractors are already too old to work effectively and efficiently. On the other hand, many farmers prefer to use private service because of their flexibility and convenience for farmers even though the private sector charges about two times of AMD harrowing rate. Thus, total tillage by AMD service did not improve (Table 3.10).

Moreover, land development has not yet been implemented well even at a single township level. All the field plots have different sizes and there are no roads and drainage systems. Thus, it is difficult for farm machineries to move in and out of the field. Like other countries, a national land reform programme is needed to establish the mechanized farming structure. For the extensive utilization of farm implements in land preparing, cultivation and other farm activities, it is necessary to develop model land consolidation farms, R&D, resource persons, budget allocation, field conditions, private sector participation, farmers' education and attitude, and incentives and cheap hiring and purchasing programmes like credit facilities especially for farmers who have inadequate capital.

Table 3.10 Production of Farm Machinery by AMD

Year	Power Tiller (Number)	Mechanized Tillage (000 turn acre) (Number)	
		By AMD	Private
1995/96	2570	12848	-
1996/97	5600	8015	-
1997/98	3080	8450	-
2004/05	7250	838	1948
2005/06	1660	691	4133
2006/07	5975	805	5092
2007/08	5475	299	4579
2008/09	3664	394	6824
2009/10	4285	169	8897

Source: Agriculture at a Glance 2011.

3.6 Credit Institutions

Agricultural credit is necessary for efficient functioning of farm production. It provides the opportunity to use additional inputs and capital items at present and then to pay for the cost from future earnings. Credit is the key element for improvement of agricultural production and marketing in many developing countries and also for the modernization of agriculture. To produce more of agricultural products, farmers must spend more on quality improved seeds, pesticides, fertilizers, chemicals and other farm inputs and becomes more important and essential for agricultural production.

Colonial Period (1886-1948)

Prior to the British annexation of Myanmar in 1885, the farmers cultivated only for domestic consumption and they did not need much money for their cultivation. Under the British Rule, however, with the opening of Suez Canal, farmers expanded agricultural land and cultivation on a commercial basis. Thus, they needed more capital for expansion of agricultural production. During the colonial period, the sources of agricultural credits obtained were from the British Colonial Government and in some areas also from cooperatives, foreign banks, and private money lenders.

The British government lent out funds for the expansion of cultivation of farmers by passing laws: the Land Improvement Loan's Act 1883 and the Agriculturist Loan's Act 1884. However, due to insufficient loans by the government, not available in time, and other difficulties, these two acts did not benefit the farmers. During 1915/16 to 1924/25, an average of only Rs 2 million was lent out by the government as compared to Rs 120 million lent out by the Chettiars in 1929.

The bulk of credits were mainly from private money lenders. The total agricultural indebtedness in the whole country during that period was estimated to be between K 500 million and K 600 million and loans by the government were about K 3 million only. Among the private money lenders, Chettiars, Myanmar money lender representatives and Dawson Bank were the main sources of agricultural credits in Myanmar prior to World War II.

The role of the Chettiars was a crucial link between Myanmar and international finance and as the providers of the capital that turned the country into the rice-bowl of the

British Empire. The Chettiars were the chief providers of capital to Myanmar cultivators throughout the colonial era. The opening of the Suez Canal in 1869 transformed Myanmar's prospects as a centre for commercial agriculture. Rising paddy and land prices and the introduction into Myanmar of British land-title law were critical factors in motivating Chettiars entry into Myanmar. The opening of the Suez Canal in 1869 and the passing of the Burma Land Act brought about the first substantial movement of Chettiars into Myanmar. By 1880 the Chettiars had fanned out through Myanmar and by the end of the century they had become by far the most important factor in the agricultural credit structure of Lower Myanmar¹.

According to the Myanmar Provincial Banking Enquiry Report (BPBE), the most dependable source on the extent of Chettiar operations, in 1905 there were 30 Chettiar offices in Myanmar, but this had increased to 1650 by 1930. The amount of Rs 650 million was the unassailable minimum of Chettiar capital employed as loans in 1930. Chettiar firms lent out between Rs 100 and Rs 120 million in Lower Myanmar, an amount it estimated to be around 70% of all borrowings from all sources. Then, later their funds for expansion of cultivation were between K 700 and K 1000 million². The improvement of Chettiar Firms is shown by Table (3.11).

Table 3.11 Chettiar Firms in Myanmar (1935-1942)
(Number)

Rangoon Firms	No. of offices in Burma per firm	Total
1	41	41
15-20	7-8	144
60-80	2-3	210
75-100	1	88
	Sub Total	483
District Firms		
900-1,000	1	950
100-200	2-3	450
	Sub Total	1400
	Grand Total (Offices)	1,883

Source: Tun Wai, *Burma's Currency and Credit*, 1962.

Cooper (1959) estimated that annual Chettiar lending represented about 80% of total lendings. Two-thirds of all Chettiar loans outstanding in 1930 were held by

¹ Cooper, 1959

² Andrus, 1948

agriculturalists, the remainder roughly categorized as trade¹. Chettiar lending was secured against collateral, and mostly against title to land. According to the Chettiar representative through BPBE, two-thirds of loans to agriculture in Lower Myanmar were secured by mortgage. For the crop component of agricultural lending, the proportion was lower again, with mortgage security backing only around one-third of all loans².

Chettiars carried on an extraordinarily wide range of banking business in Myanmar. They made loans, took in deposits, remitted funds, discounted hundis, honoured cheques, exchanged money, dealt in gold, and kept valuables for safe-keeping³. Crop-loans and loans for land purchase, redemption and improvement, were the most common forms of Chettiar lending to agriculturists. Cultivators typically drew multiple loans from their Chettiar lender throughout the year according to season from the purchase of seeds, transplanting and broadcasting, for payments to laborers, for the purchase of cattle, to repair dykes and borders, and to meet general expenses. These multiple loans constituted a type of 'revolving credit' facility, upon which repayment was due only once a year, after the sale of the cultivator's crop. With collateral security critical to Chettiar lending, it was however found out that Chettiars had extended credit to cultivators mostly on the basis of the mortgage of land. Gold was especially well-regarded as collateral too, but it was usually not available⁴.

Cooperative credit was the British Empire's favoured device for the marginalization of money lenders such as the Chettiars. Its establishment, a key recommendation of the Indian Famine Commission of 1901, was given official and legal sanction under the Cooperative Credit Societies Act promulgated by the government of British India in 1904⁵. Colonial Myanmar's cooperative credit was organized in three tiers: primary credit societies, unions, and Central Cooperative Banks.

The cooperative credit movement in Myanmar grew as rapidly as it did in the Indian Empire as a whole and by 1925 there were over 4,057 cooperative credit societies across the country embracing almost 92,000 individual members, 21 Central Cooperative Banks, 575 Unions, share capital of Rs 3.56 million and almost Rs 18 million in advances

¹ Sean Turnell, 2009

² Ibid

³ Ibid

⁴ Ibid

⁵ Ibid

Handwritten purple ink scribbles.

available or lent out to members¹. However, Myanmar's cooperative credit system accounted for relatively little of the credit needs of cultivators. During 1925, the total aggregate new loans of the 4,000 or so Credit Societies came to Rs 6.6 million². In 1930, the system failed and their members, share capital and loans declined.

By 1935, a greatly diminished cooperative credit system in Myanmar comprised 1,371 Societies with just over 29,000 members, a share capital of Rs 1.5 million and loans previously advanced of Rs 8 million. Only 10 of the Central Cooperative Banks survived into 1935 and the Unions had been almost completely destroyed as a category. A mere 57 of the 575 that had existed in 1925 survived through the following decade³.

At that time, farmers from Ayeyarwady Delta and Upper Myanmar could take loans from foreign-owned Dawson Bank and Burma Provincial Cooperative Bank Ltd. Dawson's Bank, founded in 1905 by Lawrence Dawson, was created with the express purpose of assisting Myanmar agriculturists to redeem their lands from Indian money lenders⁴. It was initially founded as a private firm, as a private company in 1914 and finally as a public company in 1921⁵. It engaged in both short-term and long-term lending to cultivators. Its short-term lending was mostly in the form of crop-loans. Long-term lending was mainly for the purpose of land redemption, the purchase of new land, land improvement, farm housing and other farm building. Crop loans were made seasonally according to purpose. Long-term loans were usually secured by mortgage over land, while crop loans were most often secured by a lien over the crops, although cultivators could also get overdraft facilities secured by land mortgage.

Dawson's Bank also lent out loans to paddy traders, to village stores and to local industry, provided that adequate security was pledged. The Bank had lower relative rates; cultivators always borrow from the Chettiars, never from Dawson's Bank. Their reason was that the Chettiar lends on a simple promissory-note, whereas the Bank requires preliminaries⁶. As the interest rates, Dawson's Bank was cheaper than the Chettiars. The Bank charged 10% per annum on overdraft lending, 12% to 16% on land mortgage, and

¹ Sean Turnell, 2009

² Tun Wai, 1953

³ Khin San Yee, 1997

⁴ Tun Wai, 1953

⁵ BPBE, 1930b

⁶ Ibid

18% on small loans not secured on land¹. Up until the Great Depression, Dawson's Bank's lending grew inexorably – Rs 1.6 million in 1921, Rs 4.3 million in 1926, and Rs 7 million in 1930². Nevertheless, it was still a long way from the advances made available by the Chettiars collectively, who remained the dominant lenders in the Myanmar countryside.

In the colonial era, there was only one Myanmar-owned and –operated scheduled bank. It was U Ye Kyaw Thu Bank and it grew out of a complex trading, shipping, and money lending entity. As a bank, however, its main business was to make advances on gold and land mortgage. The Bank funded its lending, rather, primarily from the capital of its owners and, at seasonal peaks, via an overdraft facility at the Imperial Bank. The Bank became a substantial landowner during the depression years of 1930s through loan foreclosure. U Ye Kyaw Thu Bank charged interest rates on its loans of between 9 and 12 % per annum depending upon the security offered- enjoying a substantial margin on the rates it paid on deposits, and on its overdraft with the Imperial Bank. However, the Bank's market share had been declining in the decade before World War II. Nevertheless, the existence of the Bank was a prime reason that Akyab (now Sittwe) District was one of the very few in colonial Myanmar that was able to source most of its credit needs from indigenous lenders, and where Chettiars and other Indian firms had not been able to penetrate much³.

Among private money lenders, the Chettiars from India handled the largest volume of loans. Thus, Chettiars played an enormous part all over the country and the amount of their capital actually helped the growth of agricultural production in the colonial period. Table 3.12 shows the Chettiar lending rate for different collateral or security.

¹ Sean Turnell, 2009

² BPBE, 1930b

³ Tun Wai, 1962

Table 3.12 Chettiars Lending Rates

Types of Collateral	Interest Rates (% per annum)
Land and immoveable property	9-15
Precious metals and jewellery	12-15
Promissory notes backed by collateral	12-15
Unsecured promissory notes	15-24

Source: Tun Wai, Burma's Currency and Credit, 1962.

In 1937, Myanmar was granted a "responsible parliamentary government" where from 1937 and until WW II three governments were formed (Ba Maw, U Pu and U Saw). All three Governments would attempt to enact various measures designed to achieve agricultural and credit reform. In 1937, under Ba Maw, a Land and Agricultural Committee (LAC) was formed with a wide remit for investigation and advice. The LAC was to examine and report on ownership of land and problems arising from the indebtedness of the agriculturalists. The Committee ultimately produced four reports: Part I Land Tenancy, Part II Land Alienation, Part III Agricultural Finance, and Part IV Regulation of Money Lending. Part IV was not completed until the eve of the Japanese invasion.

The Japanese occupied Myanmar from 1942 and until the final months in 1945 of World War II. But within three years, which was too little time and it was not possible to establish a viable financial system. It can be concluded that Chettiars were the main credit institutions and they supported the development of agricultural development in terms of sown acreage of agricultural land and volume of agricultural production, especially rice and then, rice exports during the colonial period of Myanmar.

Parliamentary Democracy Period (1948-1962)

After Myanmar gained independence in 1948, the Myanmar government carried out measures to solve the problems in the agriculture sector. Amendment of Tenancy Act of 1947 and provision of Land Nationalization Act 1948 were undertaken by the government. In 1954, the Land Nationalization Act 1948 was replaced by the 1953 Land Nationalization Act and Land Committees were formed to distribute the land in 1953/54. As Chettiars went back to India and 1953/54 Land Nationalization Act created small farm

size, there was lack of large scale farming and lack of private money lenders. During the parliamentary period, the policy of the Anti-Fascist Peoples' Freedom League (AFPFL) government in regard to agricultural credit was directed to provide State credit for agricultural finance and it issued agricultural loans on its own budget.

Until 1953, the government sponsored agricultural credit to farmers, channeled through cooperative societies and where these societies did not exist, credit was provided directly to the farmers. The government drew up a Five-Year Plan for agricultural development in 1952, and to provide agricultural credits to farmers, it created the Agricultural Development Bank. Thus, in 1953, the Government of Union of Myanmar enacted the Agricultural Bank Act and established the State Agriculture Bank (SAB) under the Ministry of Agriculture and Forestry, and operated the loan disbursement activities.

Furnivall's committee proposed a tripartite structure for the SAB, at the base of which would be "Village Banks". At the next level, performing a supervisory role and as lenders in their own right for deemed beyond the village institutions, were the "District Banks"- branches of the SAB proper.

Village Banks were technically owned the village they served. Each Village Bank was controlled by a village committee. The primary function of the Village Bank committee was to manage lending: deciding and distributing loans, and ensuring the necessary repayment processes were in place.

Village Banks were designed to accept deposits, but since these would take time to accumulate, lending in the early years would proceed via capital provided by the government and allocated by the District Banks. Village Banks provided funds for short term only and initially only self-liquidating crop loans. The SAB committee's stance on interest rates was that they should be as low as may be consistent with the solvency of the bank. They suggested that District Banks charge their village affiliates a rate of 6% per annum for funds, and that Village Banks lend out at 12%.

The government, however, was unable to implement those recommended the Committee because of the widespread insurgent activities. It was only after the adoption of the Agricultural and Rural Development Five-Year Scheme at the Pyidawtha Conference held in August 1952 that the State Agricultural Bank Act of 1953 was passed.

The Act, however, was applied at first in only four experimental districts, namely Mandalay, Pegu (Bago), Insein and Henzada (Hinthada) with effect from 1 June 1953. The authorized capital of the SAB was K 80 million, of which the Union Government had paid up K 50 million. The objectives of the Bank were: to issue seasonal loans to the cultivators for cultivation expenses, expeditiously and on simple lines; to educate the cultivators in their financial responsibilities by having the credit institution in the village; to foster the spirit of self-help by encouragement of thrift; to improve the financial status of the cultivators by means of thrift and cooperation; and to encourage the formation of Cooperative Societies for the amelioration of the lot of the cultivators and improvement of the amenities of rural life¹.

The Act establishing the Bank provided for the granting of seasonal loans, short-term loans and long-term loans. Seasonal loans are mainly granted for purchase of seeds, and wages for labourers in cultivation, repairing, etc., and are repayable after harvest or within 12 months. It is granted on joint personal security and the security of crop under the cultivation. Short-term loans were for 3-5 years for the purchase of cattle and farm implements and the security is both the moveable and immoveable property of the borrowers. Like the seasonal loans, these short-term loans were made to recognized village banks, but direct loans may be made to individuals.

Long-term loans were for improvements of agricultural land, such as building embankments, sinking wells and tanks, and digging irrigation canals. The period of repayment was 5-15 years and the collateral would be moveable and immoveable property. But as these loans would require large sums of money tied up for a long duration, the government decided not to grant such loans until the Bank gained wide experience and considerably enlarged its capital. And, no long-term loans had been granted by the end of 1960.

In addition, the SAB provided loans to the Cooperative Societies until April 1958 when the government decided to channel all its credit only through village banks. It also functioned as an agent for the government for those districts where the Act had not been enforced. In these districts it performed the function previously exercised by the

¹ Tun Wai, 1953

Financial Commissioner (Lands and Rural Development) and the Registrar of Cooperative Societies in respect of loans under the Agriculturists' Loan Act.

Table 3.13 Loans of State Agricultural Bank (1954-1960)

(million kyats)

Year	Granted to Village Banks			Granted to Cooperative Societies		
	Total Loans	Repayments	Amount Outstanding	Total Loans	Repayments	Amount Outstanding
1954	3.8	1.3.	3.8	8.8	3.9	8.8
1955	5.6	3.4	6.0	9.0	6.7	11.0
1956	8.4	4.8	9.6	10.2	7.3	14.0
1957	12.0	7.7	13.9	14.6	15.7	17.8
1958	29.0	12.1	30.9	0	9.5	8.3
1959	42.1	28.1	44.8	0	1.6	6.7
1960	25.8	40.4	30.2	0	0.3	6.4

Source: Union Bank of Burma, Bulletin (Quarterly). Third Quarter, 1960.

According to the above Table 3.13, the amount of loans granted through village banks by the SAB increased sharply as more and more districts were covered. On the other hand, amount handled on behalf of the government fell in 1955/56 and 1956/57, though it had recovered somewhat in 1957/58 and 1958/59.

The rate of interest charged by the SAB to the village banks was 6% per annum and that charged by the village banks to their members was 12%; while there had been a rapid expansion of loans and the number of village banks formed, care was exercised by the SAB.

Although the government had wished to place emphasis on the SAB to channel the available credit for the agriculture sector, it is by no means the only method. To begin with, even though cooperative societies are no longer used by the SAB, they still obtain some funds directly from the budget. Then again, the Agriculturists' Loan Act and the Land Improvement Loans Act were still on the statute books, and for 1958/59 the government provided K 27 million to the agriculturists under the former Act. Small loans were also given to the tenants of government estates. Finally there were other government enterprises which directly or indirectly provided credits to the agriculture sector. They

were commercial banks and the cooperative movement. At the end of 1952 the amount of agricultural credit supplied by commercial banks was K 2.4 million, K 0.4 million at the end of 1956 and K 3 million at the end of 1960.

At the same time, loans were continued to be issued from Department of General Administration. Term loans were also provided as long-term loan for one year for the development of land. The principal focus of SAB was to provide credit to farmers through a system of village banks which were to be established. The village banks were governed by a detailed set of rules laid down by the SAB.

The District Banks were the branches of the SAB proper and they functioned as the supervisory agency for the village banks, lenders in their own right, and the providers of the medium of term loans.

The Central State Agricultural Bank, as the SAB head office, allocated funds to the District Banks in much the same way as the district Banks allocated money to the villages. Likewise, it also performed a supervisory function over the operations of the District Banks branches.

Other institutions that were to yield influence upon Myanmar's agricultural credit regime in this period were cooperatives, General Administrative (GA) loans, the Chettiars, Dawson's Bank, and the State Agricultural Marketing Board (SAMB).

The need for agricultural credit in Myanmar in post-war years increased for a number of reasons. It was true that the level of agricultural output as a whole in the early post-war years was much below pre-war level and only in 1959/60 had it reached the pre-war level. But the reduced need for credit for a smaller output had been more than offset by the need to reconstruct and rehabilitate agricultural land and to build up stocks of implements and plough cattle, etc. Furthermore, the four to fivefold increase in prices of agricultural products, and also in costs of production, increased the need for credit. While land revenue had not increased and rent even reduced by statute, and there had been other advantages, such as distribution of seeds, fertilizers, etc., they had been more than offset by the lack of law and order, which had directly increased the costs of cultivation since labour, equipment, and land could not be utilized efficiently or extensively.

Table 3.14 Supply of Seasonal Credit to Agriculturists (1953/54)

Source of Borrowing	Amount Borrowed		Average Amount of Loans per Cultivator	Amount of Interest Paid	
	Million Kyat	(%)		Million Kyat	(%) Per Annum
Government	17.55	35.3	105	1.23	7
Private Source in Cash	20.32	40.6	200	10.37	51
Private Source in Kind	12.00	24.1	130	6.79	56.5
Total	49.87	100.0	165	18.39	36.9

Source: Press Release, Department of Census, July 30, 1957.

In Table 3.14, the supply of seasonal credit was for 2,129 villages. The relative importance of the government as a source of credit was 35% of total credit. However, it was still much smaller than the amounts supplied by private sources, which accounted for a total of 64.7%.

Some estimates of seasonal loan requirements had been made by the Provincial Banking Enquiry Committee and others based on different assumptions and basis. On the basis that paddy prices were three times that of pre-war level, it can be said that the supply of agricultural credit should be in the neighborhoods of K 300 million as it was estimated to be K 100 million in pre-war. It was estimated that the amount of seasonal agricultural loans supplied in post-war Myanmar ranging from a low of K 278 million to a high of K 296 million; and for the costs of cultivation ranging between K 372 million and K 489 million¹. Some of these estimates were based on the results of the 1953 Sampling Census covering the town and neighborhoods which included 47,644 farmers cultivating 482,000 acres.

However, the supply of agricultural credit was not adequate because the cultivators did not have any surplus cash or food except to feed themselves through the crop year. In the 1954, Census the amount of agricultural credit constituted only two-thirds of the costs of cultivation. The desirable amount of indebtedness for agriculturists

¹ Aye Hlaing, 1957

depends on money factors- the most important being the productivity of borrowed capital, the rate of interest, and the period of the loan¹. On the part of farmers, the great majority of farmers do not have any funds in their hands at the beginning of the agricultural seasons. Thus, loans are required to meet the paid out cost to be incurred during the season.

It was concluded that even at the time of the most liberal scale of government finance of agricultural credit, the state loans amounted to only about K 60 million which was about one-sixth of the total requirement. The rest had to be obtained from private sources. This led to the basic issues regarding problems of the policy of State agricultural credit. The government could not continue to carry out a programme of increased state financing for the agriculture sector with the present level of non-repayment of loans. The government had been to insist more and more on collective responsibility system as the main weapon for securing higher rate of repayment. This had been the basic method with all channels of lending; either through General Administration Department, or the cooperatives, or the new system of agricultural banks and agency loans. However, the recovery rates were not satisfactory and the system of state credit could not be continued for a long time. Thus, during the parliamentary period, in the absence of adequate formal credit, Myanmar agriculturists relied, as they always done, upon local money lenders.

Socialist Period (1962-1988)

Agricultural credit continued to be issued as in the parliamentary democracy period. In 1965, there were more than 10,000 village banks. In 1962, the Revolutionary Council government assumed state power agricultural credit provided was a total of K 358.3 million². Then, the government provisioned to lend out K 700 million in 1963, but farmers could borrow only over K 400 million.

Table 3.15 shows that by the mid-1960s, the great expansion in agricultural credit had petered out, after which acute scarcity of rural finance resumed its place as a characteristic feature of Myanmar's agriculture. This lack of finance was just one of a number of chronic problems that beset agriculture throughout the years of Revolutionary

¹ Tun Wai, 1957

² BSPP, Peasant Affairs

Council government, whose policy to the sector was centered upon the compulsory procurement of many commodities (rice above all), severe restrictions on domestic trade, and a complete state monopoly over the export trade. The state also had a monopoly over processing, domestic marketing and provision of agricultural inputs. It gave administrative directions to cultivators on their choice of crops, and imposed a myriad of other measures consistent with state intervention on a hitherto unprecedented scale. The end result would be falling agricultural incomes and production, a near collapse of paddy exports, and an agricultural sector of low incentives, low productivity and overall stagnation¹.

Table 3.15 Agricultural Credit (1962-1968)

Year	Credit (Million Kyat)
1962/63	171.8
1963/64	413.2
1964/65	302.5
1965/66	229.6
1966/67	120.1
1967/68	113.4

Sources: SAB and BSPP, Peasant Affairs, No.6, p.139.

Up until 1973, the SAB (the agricultural finance division of the People's Bank of the Union of Burma-PBUB from 1970) and its network of village banks remained at a core of Myanmar's rural credit system. By 1972, there were over 11,000 village banks, supposedly serving 1.9 million rural households, which was less than half of total number of such households, the remainder of whom were left to seek informal credit of various forms². Importantly, even those with access to the SAB and its village banks were unable to borrow anywhere near enough for their needs. The size of loans advanced by the SAB

¹ Myat Thein and Mya Than, 1985
² World Bank, 1974

Depended on rigid formula that allocated a set amount of kyats per acre as determined by the Ministry of Agriculture and Forests.

For paddy, the amount of loans per acre remained K 25, with higher limits set for higher-cost crops such as potatoes and onions (K 70), and lower allocation for lower-cost crops such as beans and pulses (K 10-15). These amounts were far less than were sufficient, with the K 25 allocation for paddy representing a mere 11% of average cultivation costs in 1972/73¹. According to the World Bank 1974, the average credit allocation to cost ratio across all crop categories was less than 5 %.

In April 1973, Myanmar's system of allocating rural credit via the village bank was replaced by a regime in which the bulk of credit available was channeled to cultivators by ways of "advance purchase" of their output by the state. Advance purchase relieved cultivators from paying interest on advances, but this did not mean that the credit they receive was free from cost. There had long been a substantial gap between the government's procurement price and that of prevailing in the market. This gap represented the cost to the cultivator of providing their crop to the state and, in this sense, was akin to an interest rate that might otherwise be levied on loans.

The government raised agricultural credit from K 8 to K 12 per acre in 1962/63 and then to K 25 in 1963/64 while its interest rates were lowered from 12% to 9% per annum. Moreover, the government solved the problem of agricultural credit by buying "pindaung" with the cost of cultivating and reaping costs of K 45 in 1966 and the Ministry of Industry lent credits for other crops such as cotton, jute and sugarcane.

Since 1965, the government still practiced "collective responsibility system" at village tracts with village banks, village cooperatives and village land committees. Types of credits were seasonal loans, short-term and long-term loans and loans from cooperative societies. However, in 1972, only 1.8 million rural households out of 4.4 million had real access to official credit. Although it somewhat relieved the dependence of the farmers on more expensive private sources of credit, the lending rate of K 25 covered only about 11 % of the cost of cultivation in 1972/73.

During this period, private money lending was officially banned by the government. Despite this, the practice continued to flourish. Indeed, given low

¹ Mya Than and Nishizawa, 1990

procurement prices and the diminution of financial institutions such as the SAB and the other formal banks, it became more prevalent relative to the situation in the parliamentary democracy years. According to Emery 1970, 75% of credit provided to agriculturists was supplied by private money lenders. The interest rates charged by money lenders ranged from 2%-4% per month against collateral, to 5%-10% per month on unsecured loans.

Moreover, the government sought other strategies to eliminate the money lenders. One of these was a programme, launched in 1963, that allotted K 100 million for a credit programme for landless farm labourers to purchase food. The credit made available (up to K 200 in value per person) was in kind only, and could only be accessed in installments to a value of no more than K 20 per month.

A more serious competitor to the local money lender (particularly in urban areas) was the state's owned pawnshop operations. These had been established under the "State Pawnshop Management Board (SPMB). With the creation of the monobank, this became simply the Small Loans Division (SLD) of Peoples' Bank of the Union of Burma (PBUB).

Market-Oriented Period (1988-2010)

In 1990, the Myanmar Agriculture Bank (MAB) was transferred to the Ministry of Agriculture and Irrigation as Myanma Agricultural and Rural Development Bank (MARDB) in accordance with the Myanma Agricultural and Rural Development Bank Law which was enacted by the State Law and Order Restoration Council. In 1993, the head office in Yangon was organized with six functional departments – Administrative, Loan, Accounts, Internal Audit, Research and Development, and Banking Departments. Then the MARDB was transferred from Ministry of Finance and Revenue to the Ministry of Agriculture and Irrigation in 1996. It was renamed as Myanma Agricultural Development Bank (MADB) in the same year, but its organizational set up and functions remained the same. The main goal of the MADB is to effectively support the development of agricultural, livestock and rural socio economic enterprises in the country by providing banking services. It continued operations through the countrywide network of 15 regional offices, 221 township branches and over 3,000 staff members. The Bank is still the main source of agricultural credit for small scale farmers.

Objectives of MADB are to provide loans to farmers in a simple procedure; to promote rural banking; to encourage saving habit; to support rural-socio-economic development; to cultivate habit of using banking services; and to develop banking business. To achieve these objectives, the operational guidelines are laid down by the Ministry of Agriculture and Irrigation. These guidelines are: to supply credit adequately, to deliver credit timely, to seek full recovery of loan, to enable farmers get investment through savings, to help farmers to become debt free and to make the bank self-relying.

The total seasonal loans disbursed by MADB are shown in Table 3.16. As shown in the table, total seasonal loans raised by the MADB reached K 93,489 million in 2009/2010, nearly ten-fold increase compared to the 1995 level. The rice farmers have been given top priority and about 80% of total loans is given to the rice farmers alone, while the remaining 20% had to be divided among farmers growing oilseeds, pulses, cotton and culinary crops. As short-term and long-term loans, the MADB has lent to cultivators for buying pump sets and power tillers, and some loans to cultivators who mostly grow coffee, green tea and sugarcane. No private banks have yet undertaken the money lending function to the farmers, but there are a few NGOs providing microfinance to the rural people. However, their scope and scale of operation in terms of coverage of the number of rural people and of areas is still very limited.

The MADB loans are mostly seasonal and the amount is also as small as about K 10,000 to 20,000 per acre (about \$10 - \$20 per 0.4 ha), compared to the estimated production cost of around K 100,000 to 190,000 per acre (about \$100 - \$190 per 0.4 ha). The MADB is virtually the only major source of institutional credit for small scale farmers in terms of relative coverage and accessibility for investment in agriculture. The scale and impact of MADB loans to farmers are limited in comparison with the funding requirement which is inadequate and ineffective for the purpose of productive investment. MADB's bank loan covers just around 10% of production cost. Comparison of cost of cultivation and MADB seasonal loan rate for some crops in 2010 are shown in Table 3.17.

Table 3.16 Agricultural Loans by Crops

(Kyat Millions)

Sr No	Particulars	1995/96	2000/01	2005/06	2009/10
1	Paddy	6605.71	9524.87	29292.05	76124.72
2	Maize	65.81	-	73.28	644.97
3	Groundnut	855.59	996.93	1752.42	3881.83
4	Sesamum	850.89	524.83	1562.13	5665.1
5	Mustard	0.84	4.49	48.85	184.14
6	Cotton	180.41	362.80	319.09	534.55
7	Pulses	233.66	654.76	1342.44	6453.99
8	Sugarcane	9.93	55.51	-	-
9	Other	210.95	-	-	-
	Total	9013.79	12124.19	34390.26	93489.3

Source: Ministry of Agriculture and Irrigation, Myanma Agricultural Development Bank.

Table 3.17

Comparison of Cost of Cultivation and Annual Loan Rate for Crops (2010)

Crop	Cost of cultivation (Kyat per acre)	Seasonal Loan rate (Kyat per acre)	Loan coverage to cultivation cost %
Monsoon Paddy	198,400	20,000	10.1
Maize	142,500	10,000	7.0
Groundnut	238,250	10,000	4.2
Sesame	147,710	10,000	6.8
Green gram	123,950	10,000	8.1
Black gram	85,300	10,000	11.7
Sugarcane	384,900	10,000	2.6
Jute	124,575	10,000	8.0
Long staple cotton	205,400	10,000	4.9

Source: Myanmar Agriculture at a Glance, DAP, MADB, JFD, MICDE.

Total short-term loans were about K 38 million in 2001/02 and it rose to about K 13780 million in 2009/10. Since land is owned by the Government and cannot be used as collateral, it is required that farmers borrow from MADB in a small group of 5 to 10 farmers through joint liability. MADB has limited fund resources and branch network. It receives a capital fund of K 1000 million from the Central Bank at 10% per annum, giving MADB a spread of only 5%. At present, about 1.2 million farm households or 25% of the total number of households have access to credit from MADB. MADB seasonal loans are too small to cover the total cost of production by farmers. Thus the majority of farmers are still dependent on money lenders and traders for financial assistance. They generally charge an interest rate of more than 36% per annum.

The amount of loans to various crops are K 2000-7000 for rice, K 2000-4000 for groundnut, K 1500-3000 for sesame, K 1000-2000 for pulses K 2500-3000 for short staple cotton, K 1500-3000 for corn, K 1500 for mustard, K 2000 for sugarcane and K 3000 for jute respectively. As for interest rate, MADB charge 15% on loans and 9% interest on saving deposits.

The seasonal loans must be repaid within one cropping season, and the loan size is not adequate for farmers to repay on MADB alone. Thus farmers have to borrow from informal money lenders with high interest rates ranging between 5% - 20% per month. The advantage from MADB loan is that if the crop fails because of drought and/or of other reasons, MADB allows farmers to postpone their repayment by about one year.

The Board of Directors is empowered by MADB Law to determine the loan rates. Even though seasonal loan rates are adjusted based on the increasing cost of cultivation over years, it cannot cover the market price of one bag of fertilizer input (112 kg). MADB has always followed the interest rate policy set by the Central Bank of Myanmar (CBM). CBM lend to MADB at 12.5% annual interest plus 0.5% service charges and MADB lends to its borrowers at 17% per annum. Despite the narrow margin, MADB is required to contribute 75% of its net income to the government and just the remaining 25% is kept as reserve fund. It indicates that MADB is not a profit seeking bank and has to rely totally on CBM loan.

Another type of loans is the term-loan for farm development and investment. Term-loan intends to provide purchase of farm machineries and implements such as

tractors and power tillers. The term of disbursement for these loans requires 50 percent of the implement value as saving deposits and repayment with 1 year grace period. It is noted that short term and long term loans of MADB to cultivators (to acquire farm machineries) are increasing over years from kyat 466 million in 1995 to K 9,057 million in 2007. MADB currently faces with problem of insufficiency of funds to meet the growing demand for agricultural credit. It does not have the system and procedure for disbursing loans to landless and poorest segments of the rural society. With insufficient amount of credit from MADB, most farmers borrow money at high interest rate from private money lenders and the said vicious circle has sunk them into debt spiral.

MADB puts its effort to build a sustainable source of loanable fund and to become a sound financial institution on its own as soon as possible. The loans provided as various forms of disbursements during 10 years indicated the good results in terms of recovery rate.

However, MADB's seasonal loans for production of nine main varieties of crops hardly meet the actual cost of cultivation of the farmers. Since the loan size covers only 2.5-10% of the production cost and only 25% of the farmers have access to the loan programme. All the farmers have no chance to use the land as collateral for bank due to current land policy. Since loans program was laid down based on tough rules and regulations, real poor resource farmers have less access to the loan system. Permanent land ownership with booming population in the rural land allows increasing landlessness day by day. Since poverty of rural land is mainly associated with the increased landlessness and for the progress of micro-credit project for the landlessness in rural area has become crucial.

MADB is providing loans to those farmers who can manage their land well and who are really sure to return back the money to MADB as well. However, the majority of the rural area is landless, if MADB could pave the way for those landless one way or other, the opportunity of landless will be developed. The farmers in the rural area, dwell on a certain farm size tilling the soil since those of ancestors, however, increased population day by day becomes landless. Thus, booming landless in rural area becomes a great threat for the sustainable livelihood of the people in the rural area.

Again, the Rural Saving Mobilization Scheme was launched in 1993 to channel the surplus of farmers' rapidly increasing income towards farm investment and also to make banking services available to the population in the rural areas. All borrowers from MADB are savers and MADB allowed the savers to borrow farm development loans based on their saving deposits for purchase of farm machines, power tillers and pump set, etc. The borrowers or savers pledged their savings and their newly bought machines as collateral. During 1993/94 to 2003/04, the number of savers and saving amount had increased rapidly.

Another programme for financing agricultural credits is microfinance in rural areas, started in Myanmar in 1997. However, it is still only on project status supported by NGOs – domestic and international. Activities of international programme are undertaken by the UNDP, UNOPS, Grameen Trust, PACT, GRET, World Vision, CARE Myanmar, and Save the Children. Organizations providing microfinance activities for agriculturists domestically are mainly Union Solidarity and Development Association (USDA) and agricultural related companies.

Nowadays, private companies such as Specialized Companies for crops especially rice and pulses were established in 2009 for food security and export promotion, then to development of supply chain mechanism. Moreover, they support agricultural inputs and technology for agricultural productivity. A total of 38 Rice Specialized Companies and 21 Pulses and Beans Specialized Companies were established in 2011. Their supports to farmers were K 32 billion in 2010/11.

Especially, Myanmar Rice Specialized Companies. MRSCs emerge to help the farmers by providing farm credit and such inputs as seeds and fertilizers. Although their coverage is rather small to fulfill the needs of the whole country, it is a good initiative of public-private-partnership (PPP). Farmers and MRSCs should have a more cohesive legal arrangement towards the progress and sustainable of the system. There are altogether 32 companies established in Yangon Division Region, Ayeyarwady Division Region, Bago Division Region, Magway Division Region, Mandalay Division Region and Rakhine State, as of 2011. Since the area of coverage of MRSC's loan is minimal, majority of farmers still have to rely on informal money lenders. It highlights the need of supervised

micro-financing for agriculture industry. The emergence of MRSCs is the positive move in the development of the agriculture sector.

Rice specialized companies under Myanmar Rice Traders Association (MRTA) have set the program of contract farming on paddy production with the farmers in its designated areas after Nargis. These companies provided seasonal loans as well as farm inputs such as quality seeds, fertilizers and pesticides to the farmers. As for contract terms, the farmers have to pay back in kind with prevailing market price after the harvest to the companies. The farmers can also sell the surplus paddy of the market price to the companies. This type of supply chain arrangement gives the guarantee market to the farmers for their farm products and facilitates credit for farm operation. It results the benefit of the farmers through increased crop productivity and improved product quality. This type of arrangement between farmers and crop specialized companies is successfully implementing on the base of trust for mutual benefit. However, this arrangement covers some areas of paddy production, which needs expansion of the activities in other paddy areas and also for important export crop like pulses. Funding assistance is required for crop specialized companies in order to extend their activities. In order to expedite the successful contract farming arrangement, the government should support the fund as agricultural loans to the crop Specialized Companies.

3.7 Marketing Institutions

Marketing policy is a policy that responses to price signals and gives incentives for cultivators and exporters. Agricultural marketing constitutes a vital role in enabling the smooth flow of agricultural commodities for domestic utilization or for external trade.

In line with its liberal economic philosophy, the colonial government in Myanmar practiced free marketing and pricing policies. During the colonial period, Myanmar played a leading role among rice-exporting nations and was well integrated in the international trading system. However, a central feature of Myanmar's economic policy since independence was state control of agricultural marketing. After the adoption of the market-oriented economic policies in 1988, the government introduced several reform measures to reduce their direct involvement in the national economy, including the area

of agricultural marketing and the private sector has been encouraged to engage in all forms of business, especially in marketing and trading.

Colonial Period (1886-1948)

During the colonial period, Myanmar was an export economy based on fairly commercialized peasant agriculture. Rice was the major export crop and was cultivated mostly in Lower Myanmar. In addition to rice, there were other crops, such as pulses and beans, oil seeds, sesame and groundnut cultivated in the dry zone area of Upper Myanmar; cash crops such as sugarcane, tobacco and cotton were grown in Central Myanmar; and rubber in the coastal areas of the country. However, cultivation of these crops was minimal.

In the long period of colonial rule, the country was opened to international trade largely under free market forces. Moreover, the colonial government recognized very extensive property rights of individuals in their land. As a result, land could be freely bought and sold, and mortgaged as a security for loans and so on. However, the transportation, milling, storage, and marketing of the major export crops were largely controlled and managed by powerful foreign firms. With the spread of the market economy, farmers came to depend on borrowed funds for their working capital, supplied by the easy credit policies of money lenders, mostly foreigners. However, the sharp fall of prices during the severe depression of the 1930s led to large scale alienation of land to the creditors.

With the opening of the Suez Canal, under the British Rule, Myanmar's agriculture changed from domestic to commercial basis. Moreover, building rice mills in Myanmar and demand for rice exports gave the incentives for cultivators to expand cultivation of rice and to secure marketing for rice. Myanmar cultivators (small land holders and owners) could sell their surplus to collectors (brokers) with the lower prices than the market prices. Traders, rice millers and foreign capitalists benefited by rice export, because they obtained the profit which is the gap between the price the cultivators sell and the market price. During this period, trading of rice was handled by foreign companies.

During the colonial period, Myanmar was one of the largest exporters of rice. About 30 percent of foreign trade was exports of rice. Foreign trade or marketing for external trade for rice was controlled by foreign companies: Chinese, Indians, Myanmar and Dutch were for east nations and European companies at Myanmar were for Western European countries like Steel Brothers, Globe Brother, Alarming Arakan Trading Company, Anglo Burma Company, Fair Weatheriches Company and East Asiatic Company. Bullinger Pool, collected or organized by British Companies in 1921, monopolized the rice trading and marketing in Myanmar.

Moreover, rice millers and rice traders were also important in rice marketing in Myanmar. Some were Larmishansi Company from India, Chinchang Company from China and Barclay But and Brother from Myanmar. Rice Trading Association was formed by the rice traders and controlled the price of rice. However, rice marketing for domestic and external trade was monopolized by Bullinger Pool and it bought rice at lowest prices and exported it, thus making substantial profits. Its speculative action led to decreased prices of rice gradually. Due to the Great Depression and trading companies' exploitation, prices of rice decreased to the lowest after 1925 (Table 3.18).

After the opening of Suez Cannel, production and export of rice increased year by year until 1931 and foreign companies benefited from it, but farmers could not enjoy these benefits and was worse. The very low price of rice was one of the reasons to be poor farmers and thus landlessness and laborers. At the same time, Chettiars and Banks demanded loans to farmers apart from government taxation. Farmers suffered from the worsening situation and government could not solve or release or (failed to do) effectively. As a result, Peasants' Uprising emerged in 1930. After that, more Peasants' movements or activities arose around the country¹.

In fact, the real reason that drove the Myanmar farmers into indebtedness was the British policy to monopolize all rice exports in 1918/19 for the said purposes of benefiting non-agricultural consumers by keeping the domestic price down and of preventing the realization of undue speculative profits on the part of millers and brokers engaged in the exporting business².

¹ History of Peasant Asiayone, 1982

² Report of the Administration of Burma, 1918/19

Table 3.18 Price of Paddy (Kyat/ 100 Baskets)

Year	Price of Paddy (Kyat/100 basket)
1870	70
1875	65
1880	100
1890	95
1895	95
1900	95
1905	105
1910	110
1915	125
1920	181
1925	195
1930	130
1935	94
1940	100

Source: J.S. Furnivall, *An Introduction to the Political Economy of Burma*, 1957.

The Agricultural Project Board (APB) was organized in 1944 when an Agricultural Rehabilitation Commission was created to formulate a plan for the rehabilitation of agriculture in Myanmar following the Japanese Occupation. It purchased an amount of 521,000 tons of rice with 43% allocated to deficient areas and the rest being made available to the British Ministry of Food for resale to the various importing countries.

Parliamentary Democracy Period (1948-1962)

Upon the attainment of independence, the first national government drew up a scheme known as the economic reconstruction of the country in 1947. The main thrust of the plan was to diversify agricultural production more towards cash crops such as sugarcane, jute, tobacco and cotton, both for domestic consumption and for exports. Rice continued to be the dominant crop. One of the important changes of the new government was in agricultural marketing and pricing policies. For the purpose of stabilizing domestic prices in the face of sharp fluctuations in international prices, the government introduced a system of official price for paddy and rice. This was carried out by the State Agricultural Marketing Board (SAMB) with the objective of replacing foreigners who had dominated the paddy market as middlemen. The government procurement price was

kept constant for a long period until 1961. In the early years of the policy, the domestic price was fixed at such a low level below the international price received for rice exports. The different prices of rice during this period were shown in Table 3.19. The government's procurement and retail prices for rice were kept constant at K 137 and K 211 per ton respectively from 1948/49 to 1960/61. Export prices were fluctuated and the official procurement price of paddy was kept constant and well below the export price during 1948/49 to 1960/61. This system not only kept inflation rates at low levels but also contributed greatly to capital formation¹. The sown acreage under paddy was below the 1936-40 average while that of other crops such as groundnut, sessamum, pulses, and sugarcane have surpassed the 1936-40 average². This changing structure of cropping areas was a clear reflection of the changing structure of incentives as well as the responsiveness of Myanmar farmers to changes in relative price incentives. In fact, the policy was implemented by the government through state marketing boards which were given a monopoly over the export trade in rice.

Table 3.19 Rice Prices (Ngasein Variety), Myanmar, 1948-62

(Kyat per ton)

Year	Procurement Prices		Export Prices	Retail Prices	
	Govt.	Free Market		Govt.	Free Market
1948/49	137	156	575	211	191
1949/50	137	159	731	211	289
1950/51	137	165	860	211	322
1951/52	137	158	706	211	296
1952/53	137	153	551	211	284
1953/54	137	151	469	211	286
1954/55	137	152	452	211	279
1955/56	137	156	435	211	290
1956/57	137	156	436	211	283
1957/58	137	156	429	211	275
1958/59	137	156	440	211	284
1959/60	137	162	428	211	298
1960/61	137	183	422	211	321
1961/62	144	151	432	222	358

Source: Agricultural and Farm Produce Trade Corporation: Report to the Pyithu Hluttaw,

1953/54- 1965/66; CSO Statistical Yearbook, 1970.

¹ Mya Than and Niwshizawa, 1990

² Myat Thein, 2000

A central feature of Myanmar's economic policy since independence had been the government's control of domestic procurement and exports of rice. Government procurement of rice until 1962 was mainly for export purposes. Creating a marketing system for agricultural products in general, and for rice in particular to serve the national interest was one of the central policy issues for the Myanmar government.

The main concerns of the government in the agriculture sector during the parliamentary democracy era were to redress the problems of landlessness and indebtedness, on one hand, and to promote equity on the other. The government made attempts at the state monopolization of trade in farm products as well as at price controls mainly with (1) eliminating the domination of trade in farm products by Indian and Chinese merchants, and (2) making the export earnings on farm products an important source of the state income. In 1946, the government created the State Agricultural Marketing Board (SAMB) to carry out the official procurement of rice in place of APB.

The SAMB was mandated to handle the following: assume all rice export marketing functions which had previously been performed by foreigners; provide revenue for development plans by profiting from the difference between the purchase price given to farmers and the export price received for rice; provide a guaranteed price and the stability necessary to encourage cultivators to expand their paddy acreage; and maintain price stability in the entire economy, especially in urban wage, by holding down rice prices¹.

The government drew up a Five-Year Plan for agricultural development in 1952 and to provide agricultural credits to farmers, and created the Agricultural Development Bank in 1953. However, the positive impacts of these efforts were offset by the negative impact of the marketing policy of the State Agricultural Marketing Board (SAMB).

The government's pricing system kept inflation rates at low levels and greatly increased the government's involvement in the domestic market for paddy by providing rice at a subsidized price for urban areas and rice-deficit areas all over the country. The state procurement system operated within an open market framework, where farmers could make their own decisions as to what to produce, how to produce, and who to sell to.

¹ Ambler, 1983

The SAMB bought paddy and rice from millers, middlemen, co-operatives, and the farmers, chiefly for exports, leaving the distribution of rice for domestic consumption to free market agents.

Distribution of rice from 1948 to 1963 was carried out by private enterprises and the method of distribution had been through the operation of market forces. This task was taken over by the People's Stores and Cooperatives during 1963/64 and 1973/74.

Socialist Period (1962-1988)

Under the Burmese Way to Socialism, agriculture became highly controlled and directed by the state. The state and cooperative sectors were the major players rather than the land holding peasant class.

The Revolutionary government in 1963, started a nationalization policy in various areas of the economy, and the nationalization of the marketing sector became the first and most thoroughgoing. There was a strong nationalistic motive behind the government's decision to nationalize the marketing sector of the economy, namely, its desire to break up the economic power of the resident Indians and Chinese who had dominated this sector since before independence. As a result of nationalization of the marketing sector, private trade in rice and other major farm products for domestic markets also came to be prohibited, and the collections of those products also became the domain of the government.

The SAMB was reorganized as the Union of Burma Agricultural and Marketing Board (UBAMB), which completely took over the entire trading (buying, distributing, and exporting) of "controlled" crops as crops cultivated throughout the country came to be classified into "planned" or "controlled" crops and "non-planned" or "non-controlled" crops. Moreover, as cultivated areas also came to be classified as "planned" and "non-planned areas, farmers in the "planned" areas could no longer decide freely on what, how and when to produce and sell. Then, in July 1963, the trading of eleven essential commodities, including rice, wheat, and vegetables was nationalized. The UBAMB established depots for buying paddy became a government monopoly. By 1964, as part of the nationalization of all trade and commerce, private trade in rice in the domestic market was officially prohibited and all paddy had to be sold to Trade Corporation No.1. The

UBAMB remained as Trade Corporation No.1 in 1964. It was again renamed as the Agricultural and Farm Produce Trade Corporation (AFPTC) in 1974. The export of paddy was mainly carried out by the UBAMB and then by Trade Corporation No. 1.

The objectives of the marketing policy during 1962 and 1988 were (a) to provide a guaranteed price and the stability necessary to encourage cultivators to expand their production; (b) to provide revenue for development plans and (c) to maintain price stability in the entire economy, and especially urban wages, by holding down rice prices. These aims were not different from those of SAMB period except that the Revolutionary Council government had more control over the marketing of agricultural products than its predecessors. In practice, the overwhelming emphasis on achieving the latter two objectives acted as a disincentive to expand production. This is especially so in the case of paddy/rice production at least up to 1972/73. The state procurement system operated within an open market framework and the SAMB bought paddy and rice from millers, middlemen, co-operatives, and farmers.

The economic significance of the SAMB, the UBAMB, and Trade Corporation No.1 was that it was a means of (progressive) taxation of the agriculture sector, although it was asserted that their role was to replace the middle men in paddy trade. However, in 1972/73, local co-operatives were given the responsibility for the procurement and distribution of rice. The bad weather contributed to the decline in production during this year and, as a result, farmers, traders, households, and even local authorities started hoarding paddy. This led to rice shortages in the towns and the situation became chaotic. This in turn sparked the workers' riots in Yangon in 1974.

As far as the agricultural pricing policy is concerned there was no significant change except in 1973/74 when the government increased prices based, unlike in previous cases, on the cost of cultivation. The government controlled the prices of paddy, wheat, maize, cotton, kenaf, jute, rubber, sugarcane, Virginia tobacco and some pulses and beans and set the procurement prices of "controlled" crops nationally, regardless of geographical location, varying only according to the type or grade of each crop. Paddy price was kept low and constant for a long time and the export price was approximately two times higher than the government procurement price. This was the result of the pricing policy of the Revolutionary Council government which was, in essence, the

continuation of the price policy of the AFPFL governments. The rationale was that the government, by keeping paddy price low, could make profits for capital accumulation and it would be able to supply urban dwellers and laborers with cheap staple food, and thus control the rate of inflation. In fact, the price policy of that period was consumer-biased and a kind of welfare policy measure. This price policy obviously depressed the incentives for farmers to grow paddy.

With the beginning of the 1974/75 season, the government implemented a new procurement system which was actually a "compulsory delivery system". According to this system, a quota of paddy which had to be sold at a fixed price to the government depot was set for each farmer according to the size of his holding for paddy, the yield per acre, his family size and the amount of paddy to be paid to hired labor. The remaining part of the harvest could be sold within the township. This was actually a form of progressive taxation which favored the small farmer with poor performance. In other words, this was yet again a policy of equity rather than of improving productivity. Moreover, the state applied, during this period, an advance purchase system which is similar to the "pindaung" system, by which lenders extended credit to the farmers in cash for which farmers had to pay back in crops. Trade Corporation No.1 (later AFPTC) purchased paddy from the farmers with advance payments through its depots all over the country from 1974/75. State-procured paddy was milled by about 45 state-owned mills and by about 800 private mills under contract with the AFPTC. An additional 850 privately owned rice mills milled rice only for domestic consumption of the farmers and were forbidden to mill paddy brought in by anyone other than the producers themselves. However, rice found its way to the black market through direct sale or through private rice mills.

Rice found in the black market was mostly from the large farmers. Small farmers, on the other hand, sometimes had to sell part of their "wunza" or the part of the production kept for home consumption to the AFPTC to fulfill their quota and later was forced to buy rice for their own consumption at the black market price, which was about twice the price of what they sold to the state. Since 1979/80, the AFPTC provided incentives for the sale of rice above quota. Those who sold extra rice could buy some goods at the state shops at the official price which was much cheaper than the free market

price. These incentives plus a good harvest helped the AFPTC to buy more paddy during this period. However, it was found that the amount of procured paddy was inversely related to the gap between the official procurement price and the black market price. This means that the wider the gap between these two prices, the lesser the amount of government procurement.

As shown in Table 3.20, in 1973/74 the government raised the procurement price of paddy to more than twice that of the 1972/73 price to correct the imbalance that had been perpetuated for more than twenty years. The prices of other crops were adjusted too. This price increase received enthusiastic response from paddy farmers and their sown acreage increased along with production and procurement. The paddy price was increased again in 1979/80 and in 1980/81 as the government felt that the incentives created by the price hike in 1974 had declined in importance after 1977/78.

The distribution of rice for internal consumption was carried out by local co-operatives which replaced the People's Stores. Co-operatives were more flexible and easier to manage than the People's Stores. In practice, the amount of rice for distribution in each and every State/Division was calculated by the Ministry of Trade, with the approval of the Cabinet. Then the respective People's Council at each level set the amount to be distributed within their administrative areas.

The role of co-operatives in the procurement of agricultural products became more and more pronounced in this period. This was also part of the strategy to increase the co-operatives' involvement in the country's economy, in line with the Twenty-Year Plan.

In September 1987, the most radical reform in marketing policy was introduced with the lifting of the Twenty One-year-old restrictions on free trade of paddy and other eight crops. Then, the government announced that farmers should pay agricultural taxes in kind. Again, in February 1988, the government announced to allow private business and co-operatives to export rice, relaxing its Twenty Five-year-old monopoly.

Market-Oriented Period (1988-2010)

Following the official revocation of the "1965 Law of Establishment of Socialist Economic System" in 1989, a series of liberalization measures were carried out in order

to enable the transition to a market-oriented system. Among major economic reforms, land and agricultural sector reforms were for initiating institutional changes such as the establishment of land commission to ensure optimum use of land resources; abolishing price controls, reduction of compulsory delivery quota for paddy; reduction of subsidies; leasing of land for private investment as well as foreign direct investment; measures for production expansion.

Reforms on the production side represent both a departure from and a return to the old style of government intervention. On the one hand, farmers are in principle allowed to cultivate crops of their choice and to process them freely. Foreign direct investment is also allowed in agricultural production and other activities. In addition, the gradual elimination of subsidies on farm inputs came to constitute yet another component of production reforms. On the other hand, since the introduction of Summer Paddy Program in 1992/93, farmers were compelled to grow summer paddy.

The Myanmar Agricultural Produce Trading (MAPT) of the Ministry of Commerce was restructured again as a State Economic Enterprise in 1989. Paddy is purchased under a quota system by the MAPT. This system is applied to the monsoon rice which is produced in the monsoon season, and the quota rate is about 10 to 12 baskets per acre.

MAPT is responsible for procurement, processing, storage, packaging, transportation, distribution and exports of agricultural produces- rice, pulses, beans, maize, oil cakes and other agricultural and farm produce-cattle and goat, brown slab sugar, cattle hides and skins respectively. Local administrative authorities legally support MAPT in paddy procurement process forming supervisory committees at various levels. MAPT is a unique department which was mainly established for procurement of paddy directly from farmers with transport, storage, rice processing, oil processing, manufacturing of packaging materials, construction of new rice mills, warehouses, pests and quality control and distribution to the government employees, military personnel, hospitals, student hostels, prisons and social welfare institutions. Based on the purchased rice produce and distribution, the remaining balance will be either exported or kept as a buffer stock. The buffer stock and export varies with several situations, the weather of the harvested crop-year, the interest and feedback of the farmers on quota system, the

handling of quality control from the farmers' field to the post harvest processing of MAPT, and the demand of international market.

Table 3.20 Prices of Paddy/Rice (1962 – 1988)

(Kyat per ton)

Year	Retail		Procurement		Ratio of Export Price/Govt. Price	Export Price
	Govt.	Free Market	Govt.	Free Market		
1962/63	222	378	149	166	2.973	443
1963/64	222	395	149	159	3.000	447
1964/65	229	357	149	155	3.167	472
1965/66	229	499	149	147	3.248	484
1966/67	251	1,400	163	165	3.196	521
1967/68	265	1,300	172	209	3.36	578
1968/69	265	900	172	528	4.087	703
1969/70	311	568	172	244	3.877	667
1970/71	311	628	172	281	2.703	465
1971/72	311	1,038	172	538	2.436	419
1972/73	427	1,109	204	582	2.509	512
1973/74	640	1,344	431	729	1.916	826
1974/75	710	1,368	431	744	3.733	1,609
1975/76	804	1,283	431	679	4.074	1,756
1976/77	870	1,123	431	579	2.684	1,257
1977/78	894	1,368	431	732	3.185	1,373
1978/79	935	1,674	446	1,132	3.226	1,439
1979/80	935	1,176	446	1,211	3.349	1,494
1980/81	935	1,647	472	1,253	3.19	1,506
1981/82	894	1,289	472	1,833	4.978	2,350
1982/83	894	1,500	472	1,986	5.317	2,510
1983/84	894	1,834	472	2,291	3.75	1,770
1984/85	894	2,022	472	2,444	3.341	1,577
1985/86	894	2,126	472	2,521	2.790	1,317
1986/87	894	2,139	472	2,597	3.010	1,421
1987/88	894	5,747	472	2,879	1.737	820

Sources: Mya Than and Niwshizawa, Agricultural Policy Reforms and Agricultural Development in Myanmar, 1990.

In 2003/04, paddy purchasing programme of the government was changed. UMFCFI (established in 1919 as the Myanmar Chamber of Commerce or Burmese

Chamber of Commerce (BCC) during the British colonial period, then developed into the Union of Burma Chamber of Commerce and Industry (UBCCI) during 1948 to 1962, and in 1999, UMCCI was upgraded as the Union of Myanmar Federation of Chamber of Commerce and Industry (UMFCCI) in order to strengthen its capacity and scope in the economic development of the nation), is responsible for purchasing the paddy at various levels of township, district, State and Division and Headquarters in Yangon. The price of paddy is based on the prevailing market price, which is considered as appropriate for both farmers and consumers as well. The purchasing depots at various rice production areas are established. The purchased paddy is transported by the buyers to the warehouse of MAPT where the same amount of paddy price is paid to the buyers by MAPT. The purchased rice quality standard is undertaken using the same procedure of MAPT.

A new rice trade policy was announced on 24th August in 2003 and the compulsory delivery system on paddy was removed beginning from the 2003 harvest, then government would no longer buy paddy directly from the farmers. According to the policy, Rice Traders' Association will purchase rice freely from the farmers at market prices. Then, paddy will be transferred to MAPT with the same price as it was bought from the farmers. However, for the distribution of rice to the target group is still managed by MAPT and export is handled by the First Company Limited of Myanmar Rice Import and Export in Yangon.

Domestic wholesale prices of the crops have increased after market liberalization in 2003, particularly paddy and pulses which are the major exporting crops. It indicates that increasing market prices of rice and pulses are the signals to the farmers to increase crop production in successive years (Table 3.21). However, prices fluctuation in pulses appeared in some years after 2000, depending on demand of Indian market. Since 74 percent of the total export volume contributes largest share to India, export prices to India obviously reflect domestic wholesale market prices of the pulses.

Domestic market prices of black gram and green gram in 2009 were higher than the last year by 39 % and 27 %, respectively. The export prices of black gram and green gram to Indian market in 2009 were higher than the price levels in 2008 by 49% and 64%, respectively. The trend of domestic prices of pulses followed the trend of export prices in Indian market. Since India occupies the position of the largest importer,

continuous study and analysis should be made on production, consumption and trade policy of India and supply and demand situation in the international market. To maximize the export earnings and to sustain export volume, Myanmar needs to adopt a much more intelligent as well as technical approaches to export markets in terms of market analysis, quality improvement and value added products in view of regional free trade and global trading arrangement.

Table 3.21 Crop and Price Trend at Harvest Time (Wholesale Market Price)

Year	Paddy		Pulses (Mungbean)		Pulses (Greengram)		Pulses (Pigeonpea)	
	Output	Price	Output	Price	Output	Price	Output	Price
1985	14,090	459	93	1,556	30	1,244	51	1,089
1990	13,748	2,356	99	15,138	62	12,604	42	15,771
1995	17,669	4,086	365	43,556	332	35,778	142	37,402
1998	16,807	16,346	437	66,889	457	100,116	157	105,778
1999	19,808	16,346	421	112,680	471	98,136	182	132,002
2000	20,987	16,346	523	166,112	511	110,384	315	114,212
2001	21,569	16,346	625	155,555	569	202,222	458	132,222
2002	21,461	18,990	654	248,888	607	287,777	435	222,444
2003	22,770	62,500	728	217,777	662	228,666	478	256,666
2004	24,361	72,115	899	264,860	778	290,734	547	241,283
2005	27,683	110,400	1,021	395,111	945	406,528	584	269,111
2006	30,923	186,960	1,201	774,667	1,055	625,333	628	295,555
2007	31,450	168,000	1,381	590,333	1,197	538,222	700	470,400
2008	32,573	163,200	1,446	491,555	1,240	644,933	745	447,675

* Output - ('000 tons) and Price -Kyat/ton

Source: Myanmar Agriculture Service.

With the new rice trade policy, the role of MAPT needs to change. It could look after technology sharing service for both domestic rice traders and exporters in terms of

rice quality control, grading, post harvest handlings on storage, milling, pest control and inspection to be comparable with other international rice exporters. In order to keep up with advanced rice processing technology with others, the existing R & D at PTAC should be strengthened.

Moreover, export of most agricultural products was opened. However, the 10% tax imposed on value of export earning comprised of 8% for commercial tax and 2% for income tax. This export tax is part of the cost in doing business for exporters. In order to maintain profit margin, traders or exporters, have distinguished the 10% in their payment to farmers on price at the farm gate hence the farmers are receiving 10% less of their products which is lower than the actual export price after deducting export tax. Therefore, the export tax is like an implicit tax on selling of the export products by farmers. In this case, farmers do not receive the actual market price. In August 2011, imposing the commercial tax on rice and other products (pulses and beans, maize, sesame and rubber) was removed to promote exports by Notification No. 32/2011¹.

According to the survey of Food and Agricultural Organization of the UN (FAO), a high priority is given to the establishment of a Market Information Service (MIS) in order to make the agricultural marketing system more competitive and efficient under the market-oriented economy. The major objective of the MIS is to promote market transparency to the advantage of market participants including farmers, collectors, wholesalers, and retailers.

The MIS Price Bulletin and the Agri-business News have been published on a monthly and weekly basis since late 2000 in order to achieve the MIS objective and to meet the needs of market participants. The News includes information on daily prices in Yangon and Mandalay markets, and information of weekly prices of 14 agricultural markets across the country. The Bulletin and the News are useful to both policy makers and market participants such as wholesalers, traders, exporters, and others. Various types of organizations such as state, co-operatives, joint ventures, and private enterprises were allowed to do business in previously state-controlled agricultural products.

Recently Commodity Exchange Centers have been increasing in States and Divisions, and a total of 35 centers were organized and 25 centers will be continued.

¹ The New Light of Myanmar, August 16, 2011

Since 2006, Workshops on Development of Commodity Exchange Centers have been conducted.

Underlying the market economic system after 1988, trade barriers previously imposed by the government were relaxed to some extent both in domestic and international markets, the traders came to enjoy on export and import of agricultural products as well as trading in domestic markets. Several private associations for the specific agricultural products like rice, pulses, oilseeds, and vegetables and fruits, etc. have been formed under the Union of Myanmar Federation for Chambers of Commerce and Industry (UMFCCI). Up to now a total of 13 agricultural crops related associations at the central level are formed under UMFCCI. These associations are (1) Myanmar Paddy Producers Association, (2) Myanmar Rice and Paddy Traders Association; (3) Myanmar Rice Miller's Association; (4) Myanmar Fruit and Vegetable Producer and Exporter Association; (5) Myanmar Pulses, Beans and Sesame Seeds Merchants Association; (6) Myanmar Edible Oil Dealers Association; (7) Myanmar Rubber Producers Association; (8) Myanmar Farm Crop Producers' Association, (9) Myanmar Sugarcane and Sugar Related Products merchants and manufacturers Association (10) Myanmar Oil Palm Producers' Association; (11) Myanmar Agro Based Food Processors and Exporter Association; (12) Myanmar Perennial Crop Producers' Association and (13) Myanmar Onion, Garlic and Culinary Crops Production and Exporting Association. Myanmar Fisheries Federation and Myanmar Forest Products and Timber Merchants Association also affiliate with UMFCCI.

At the apex of the chambers and associations in the country, the UMFCCI stands as a national NGO, representing and safeguarding the interest of the private business sector. Under the federation, there are 19 trade associations of which the following are related to the agriculture sector: Myanmar Rice Millers Association, Myanmar Rice and Paddy Wholesalers Association, Myanmar Edible Oil Dealers Association, Myanmar Pulses, Beans and Sesame Seeds Merchants Association, and Crop Producers' Associations.

Myanmar Rice Industry Association was formed comprising segmented associations namely, Myanmar Paddy Producers Association, Myanmar Rice Miller's Association, Myanmar Rice & Paddy Traders Association and Rice Specialized

Companies, in order to integrate the activities along the supply chain with the main objective of developing efficient and competitive Myanmar rice industry and to support sustainable development of agricultural production through Public-Private-Partnership (PPP). Myanmar Rice Specialized Companies (MRSCs) engages in cooperation with the farmers in identified areas by supporting inputs and credit to produce the quality rice. Since government seed production program is insufficient to cover all areas of paddy cultivation, the MRSCs provide the certified seeds to produce required quality for export.

About 40% of the paddy production cost is also provided by the companies through contract arrangements. Seeds, credit with 2% interest per month without collateral and other inputs are provided to the farmers through contract farming arrangement, settling mutual benefit between farmers and traders. However, the area under this arrangement is limited and covers few farm households in designated township. This type of arrangement may be lasting as long as keeping trust between farmers and investors, since there is no legal instrument if it has some breaches on agreement by either side. In order to implement the activities of the association, Myanmar Rice Industry Associations have been formed at township levels and down to village tract levels in target areas to implement the activities such as distribution of farm inputs, advance payment for cultivation and collection of the payback in kind. Without legal association or group of farmers from demand side, crop specialized companies are dealing with local farmers' group for their business based on trust and mutual benefits which is not the legal binding and is difficult for sustainable arrangement.

Stabilization of domestic rice is being addressed as an important issue for low income groups. In order to tackle this issue, it comes up to adjust the export volume of rice through limitation on export volume when domestic price is tending to incline, that makes distortion on marketing arrangement and relationship to customers.

Regarding the pricing policy, stability of the commodity price at reasonable level is essential to benefit both farmers and consumers. Domestic market price trend is normally reflected by the changes of price received for export crops subject to normal domestic supply and consumption. Consequently, domestic price signals producers to adjust their production that affects fluctuation at the production level. Since rice is the staple food of the country, fluctuations in domestic price of rice result in adverse effects

on both farmers and consumers. In order to protect rice farmers and consumers, a price guaranteed system needed to be put in place and this price guaranteed should cover the actual cost of cultivation in different paddy producing areas such as rice deficit and surplus areas. If surplus of paddy is not purchased by traders in the domestic market, the government takes responsibility to purchase the excess supply as a buffer stocks, otherwise rice farmers will encounter losses due to the declining rice price. To protect low income consumers in urban area, if the rice price increase sharply due to excess demand or seasonal fluctuation, rice from buffer stock can be released with at cost at which the price was purchased plus marketing cost associated with handling, storage cost, transport cost and capital cost.

In order to protect both farmers and consumers at the country, paddy production level, domestic market demand and sale contract volume with buyer countries should be adjusted and monitored constantly. The reason is that if export price volume exceeds than the country's surplus situation, it will inevitably lead to higher price in domestic market. In turn, if the rice surplus volume exceeds the quantity demanded by exporters, rice price in the domestic market will fall sharply. Strategic pricing policy needed to be implemented in medium term for sustainability in the long term.

Serious consideration should also be given by the Government to implement price control in the domestic market for certain essential items e.g. rice, sugar, cooking oil etc are the basic needs of the society.

Recently, according to National Reserve Rice policy the government has been undertaking the guaranteed price system for rice. It has been implemented by the Regional Reserve Rice Supervision Committee under the UMFCCI in collaboration with the Ministry of Commerce where the price of rice is set by K 330,000 per 100 baskets.

3.8 Analysis on Institutional Changes

Land Policy and Property Rights System

Institutional changes on land policy and property rights system during the study periods can be analyzed as in Table 3.22. The great difference can be seen in that of the colonial period under the British rule and of post-independent periods under Myanmar governments.

Table 3.22 Changes in Land Policy and Property Rights System

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Private property rights of land - Land holder's right - Land and Revenue Act in 1876 - Land tax exemption for cultivators 	<ul style="list-style-type: none"> - State is ultimate owner of land - Right to work of land - Land Nationalization Act 1948 - Disposal of Tenancy Act 1948 - Tenancy Standard Rent Act 1950 - Redistribution of land 1953/54 	<ul style="list-style-type: none"> - State is ultimate Owner of land - Right to till the land - Abolishment of Landlordism - Redistribution of land - Farmers' Right Protection Law 1963 - Tenancy Law 1965 - Control cultivation 	<ul style="list-style-type: none"> - State is ultimate owner of land - Right to till the land - Lease rights of land for private sector - Allow FDI & Private investment in land - Committee for Management of Cultivable, Fallow and Waste Land 1991 - Vacant Land Law 2012 - Agricultural Land Law in 2012

Source: Own Compilation.

During the colonial period, British government's policy was laissez faire policy. According to the policy, the government conducted free trade land policy and permitted the private property rights of land. These were incentives for expansion of sown area of paddy and then promoted the export of paddy/rice. As a result, it can be said that the agriculture sector developed during this period, although the development was lop-sided which much depended on mono crop, paddy. On the other hand, the development did not benefit to Myanmar farmers. Due to free trade land policy and private property rights, farmers were free to transfer their lands and mortgage them as collateral, and cultivate what they want. Unfortunately, the Great Depression and decrease in price of rice led to farmers to become worse. Moreover, providing sufficient loans by Chettiars to farmers with high interest rate, lack of knowledge and education, simplicity of farmers were driving factors to be poor farmers. Lastly, farmers were indebted and lost their lands. Thus, in the heritage of colonial period for Myanmar farmers was indebtedness, landlessness and tenants.

Again, during this period, the British government tried to solve these problems by investigation and reporting bills, but they were not approved. It was because the government itself was prior to the interest of land owners and money lenders rather than

indigenous farmers. Thus, the British government did try regarding land **policy and** tenants' rights, but not willingly.

In this, the agriculture sector developed in terms of sown acreage, **production and** export of rice, but farmers' income and their livelihood/living condition did not **improve**. It was due to exploitation of the British government and foreign marketing **companies**, although there was faceless mechanism of laissez faire policy. Moreover, **farmers'** knowledge and attitude were also contributed to those situations.

There was the very extreme institutional change; ie., land policy of the **Myanmar** government after gaining independence. Given the bitter experiences under colonial **rule**, where the Myanmar was relegated to the lowest rung of the economic ladder, what emerged in the years that followed was a strange mixture of nationalism, socialism, and the market system. After independence, Myanmar government introduced agrarian reforms with the aim of uplifting the well being and standard of living of rural people and started with the Land Nationalization Act 1948. Thus, the State was the ultimate owner of land and prohibited leasing, transferring and selling. Farmers had the right to work only. Moreover, the government redistributed land to poor landless farmers with equity basis. However, the redistribution of land was ineffective and landlords still existed. During the parliamentary democracy period, the agriculture sector of Myanmar did not improve because of many factors.

Then, successive governments did not effectively change the land policy. During the socialist period, the government conducted more strict control on cultivation with planned areas and crops although the government enacted the Farmers' Right Protection Law and Tenancy Law. The main difference is that the SLORC government during the market-oriented period permitted private investment including FDI and to work on fallow and waste land through the Committee. Recently, the new government of democracy period enacted the Land Law. According to this, farmers have land use right and selling, mortgaging, leasing, but exchange and giving the right can only be conducted by approvals of related departments. Moreover, farmers are permitted to mortgage their land use right for cultivation at the government banks and banks that recognized by the government. The government established Land Management Organization to solve the problems on land use rights, dispute settlements for land transferring and so on.

Water Supply and Irrigation Related Institutions

Water supply and irrigation facilities had been taking place since the rule of the Myanmar Kings. Changes in Water Supply and Irrigation Related Institutions can be shown in Table 3.23.

Table 3.23 Changes in Water Supply and Irrigation Related Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Established public works department 1861 - Maintained existing dams - Constructed some earthen and concrete diversion weirs - Irrigated area 1.5 million acre 	<ul style="list-style-type: none"> - Established Rura Water Supply and Environment Organization 1952 - Remained unchanged irrigated area 	<ul style="list-style-type: none"> - Transformed as a Water Supply Project 1963 - Irrigation Department - Constructed some irrigation works - Irrigated area 1.4 million acre 	<ul style="list-style-type: none"> - Water Resource Utilization Department 1995 - 231 Irrigated Projects - 322 River Pump Stations - 8012 Tube Wells - Irrigated area 3.12 million acre - 17% of total sown Area

Source: Own Compilation.

There was no significant development in irrigation facilities and some were rebuilt during the colonial period. After gaining independence, there were no improvement for irrigation due to political instability and the irrigation facilities were severely destroyed during WW II. Only some irrigation works were constructed during the socialist period. It seemed to be lack of expansion of cultivated areas; most cultivation of paddy was in the rain-fed areas in Lower Myanmar. During the market-oriented period, utilization of water supply and irrigation facilities such as pumps, tube wells, dams and reservoirs increased dramatically. It was because expansion of sown areas through horizontal and vertical like double and multiple cropping, and the summer paddy program. As a result, irrigated areas increased to about 17% of total sown areas. Irrigation is integral for the cultivation of especially summer paddy and also essential for the dry zone area, but effective utilization of irrigation facilities is also important with sustainable basis or without environmental degradation.

Research Institutions

Research and Development is the backbone for the promotion of agricultural production. Table 3.24 shows the changes in Research Institutions.

Table 3.24 Changes in Research Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Started as Research Section 1906 - Central Seed Farm 1907 (breeding variety seeds for rice and some other crops) - Variety Seed Gardens 1920 - State Agriculture Schools (1911) - Agricultural College 1924 - Agricultural Science 	<ul style="list-style-type: none"> - Agricultural Research Institute (Gyogone) 1954 - Central Farms 	<ul style="list-style-type: none"> - Rice Research Institute 1973 - Central Agricultural Research and Training Center (CARTC) 1984 - Introduced High Yield Varieties (HYVs) seeds 1972/73 - Launched Special High Yield Paddy Project 1977 - Developed series of seed projects 	<ul style="list-style-type: none"> - Central Agricultural Research Institute for R&D of cereals, peas & beans, oil crops, fruits & vegetables - HYVs rice & other crops - MCSE, MSE, MJE, MPCE 1994 - separated CARI to Department of Agricultural Research

Source: Own Compilation.

Research institutions had been established since the colonial period as a form of experimental gardens with the activities of breeding, seed distribution and experiments of crops. During this period, transformation of subsistent farming to commercial farming, some agricultural crops including paddy were experimented and introduced in the country with weather and soil conditions in different regions.

Agricultural Research Institute and Central Farms were established during the parliamentary period. In the period of socialist era, Rice Research Institute, Research and Training Centers were opened and introduced HYVs seeds, then also launched Special High Yield Paddy Projects and developed series of seed projects. As a result, HYVs areas and yield for paddy and other HYVs crops increased rapidly during the late 1970s and the early 1980s. However, the facilities did not improve and the speed of HYVs slowed down with the slow growth of economic condition in the late 1980s. During the market-oriented

period, the lack of funds and facilities for R&D, insufficient number of qualified staffs and lack of efficient crop specialists were main impediments to improve the R&D in the agriculture sector. Recently, the Ministry of Agriculture and Irrigation introduced hybrid paddy and distributed and demonstrated the hybrid paddy growing.

Extension and Training Institutions

Extension and Training Institutions started during colonial period. As can be seen in Table 3.25, there was not much improvement in extension and training institutions during colonial and parliamentary democracy periods.

Table 3.25 Changes in Extension and Training Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Distribution variety seeds - Agricultural Garden - Quality Seed Gardens 	<ul style="list-style-type: none"> - No significant Improvement 	<ul style="list-style-type: none"> - High Yield Varieties (HYVs) - SHY (Special High Yield Variety) Programme - T&V programme - Mass media, education pamphlets 	<ul style="list-style-type: none"> - HYVs rice & other crops - Hybrid variety - Summer Paddy Programme 1992/93 - Demonstration Plots - Block-wise crop production zones

Source: Own Compilation.

Significant development of extension facilities was found during the second half of 1970s and the first half of 1980s. Particularly, distribution and demonstration for HYVs for Paddy to farmers in agricultural farms had been conducted with encouragement of the government, motivation and coordination of Peasants' Association, active participation of farmers, and supports of People's Council.

Farm Implement Related Institutions

Since Myanmar Kings, agriculture was subsistent and depended on manual workers and used draught cattle. According to Table 3.26, farm implement related institutions have not improved significantly in Myanmar.

Even in the colonial period, though there was tremendous expansion in cultivation, Myanmar's agriculture was still based on traditional methods. Utilization of farm

implements started to improve after independence. However, farm mechanization and utilization of farm implements still underdeveloped mainly due to lack of improvement in technology, lack of investment, land fragmentation, soil quality, and land structure. The AMD under the Ministry of Agriculture and Irrigation produced and hired farm implements to farmers, but not in a substantial amount. Some farmers bought and hired private firms. It still needs to utilize farm implements extensively to increase production.

Table 3.26 Changes in Farm Implement Related Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
- Used draught cattle and manpower	- Agricultural Engineering Branch under the Department of Agriculture 1951 - Procuring tractors and tractor hiring services - 5 Tractor Driving Training Schools	- Agricultural Mechanization Department under MAS 1972 - Distribution of machineries - Tilling works in planned cropped areas	- 2 farm machinery factories - 1 farm machinery assembly plant - 99 Agricultural Tractor Stations - Participation of Private sector - Increasing utilization of farm machineries and equipment - 24 model mechanized villages - Increased cropping intensity - Land preparation, development and extension of cultivated soil - Co-operation with MAS, other Enterprises of MOAI & private sector for demonstration of new mechanized products

Source: Own Compilation.

Credit Institutions

Regarding credit institutions, private money lenders mainly provided loans to farmers although the governments established formal credit institutions and other institutions such as banks and credit societies in Myanmar. The change in credit institutions is shown in Table 3.27. During the colonial period, private money lenders particularly Chettiars were the main source of agricultural credits. Other sources of credits for agriculture such as government, cooperatives and private money lenders did not provide sufficient loans.

After independence, governments established State-owned banks and provided agricultural credits, with not covered the costs of cultivation. But, during the market-oriented period, NGOs and INGOs, private companies have provided loans to farmers,

Although they provided limited amount. Recently, the new government raised the amounts of loans and decreased rates of interest on agricultural loans in 2012.

Table 3.27 Changes in Credit Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Land Improvement Loans Act 1883 - Agricultural Loans Act 1884 - British Colonial Government - Foreign Banks, - Co-operative - Private money lenders (Chettiars, Indian and Chinese lenders, indigenous lenders) 	<ul style="list-style-type: none"> - Agricultural Bank Act 1953 - AFPFL government - State Agricultural Bank 1953 - Department of General Administration - Co-operatives - Established village banks - provided short and long term loans 	<ul style="list-style-type: none"> - Myanma Agricultural Bank in 1976 - Issued loans to state owned agricultural organizations, co-ops, village banks and farmers - raised amount of credit - created new loans in 1978/79 - draught cattle bullock carts loan 	<ul style="list-style-type: none"> - MARDB Law 1990 - Established MARDB - Launched Rural Saving Mobilization Scheme 1993 - Renamed MADB 1996 - Loans for purchasing farm machineries - INGOs, NGOs - Development Companies - Specialized Companies - Contract Farming System - Raising lending rate - Reducing interest rate

Source: Own Compilation.

Moreover, farmers were permitted to withdraw their savings from MADB that they saved according to Rural Credit Mobilization Scheme. However, the official institutional loans to farmers do not cover the cost of cultivation and farmers still have to borrow from the private sector. Therefore, at present, farmers mostly have to rely on informal money lenders as in the previous periods, paying exorbitant interest rates.

Marketing Institutions

Marketing institutions were important role in agricultural development in Myanmar. Table 3.28 shows the change in marketing institutions. During the colonial period, the British government practiced free trade policy and marketing companies monopolized rice trading. However, there was secure market for rice export and marketing companies benefited from it. When Myanmar gained independence, the government established State Marketing Board and controlled pricing. Moreover, the

Board on behalf of the government conducted export of rice, thus farmers freely marketed rice in only locally.

Table 3.28 Changes in Marketing Institutions

Colonial Period	Parliamentary Democracy Period	Socialist Period	Market-oriented Period
<ul style="list-style-type: none"> - Free and secure marketing policy - Controlled by traders, rice millers, and foreign rice trading companies - Rice Trading Association - Bullinger Pool 1921 - Very low prices for farmers - Big gap between farmers' selling price and market prevailing price 	<ul style="list-style-type: none"> - SAMB Act 1950 - State Agricultural Marketing Board 1953 - Fixed procurement price of paddy - Controlled by SAMB 	<ul style="list-style-type: none"> - UBAMB 1963, Trade Corporation (1) 1968, AFPTC 1976 - Procurement system - Compulsory Delivery Quota System - Set planned crops - Liberalized trade of agricultural products except paddy 	<ul style="list-style-type: none"> - Controlled by MAPT 1989 - removed compulsory delivery quota system for paddy - decontrolled prices - New Rice Policy 2003 - abolished procurement system - UMFCCI, Leading Companies, Development Companies, Commodity Exchange Centers - State Reserve Rice Supervisory Committee - Guarantee pricing - Direct purchasing of paddy

Source: Own Compilation.

However, the government more strictly controlled rice marketing in both domestic and foreign trade during the socialist period. Farmers had to sell their produce to the SAMB on procurement basis. Moreover, farmers were prohibited the cultivation of crops that farmers want to cultivate and farmers had to cultivate the planned crops. Thus, farmers were controlled and exploited in various ways after independence, and also especially during the socialist period. Although the government intended to development of agriculture sector, the sector had been exploited to extract surplus through fixing the procurement price of rice which below the world market price. Strict controls, lack of sound marketing institutions, and lack of incentives to invest had led farmers to disincentives to increase productivity.

In 1987, the government lifted restrictions on trade of some agricultural products; rice was still controlled as a staple food of the country. The significant progress was tremendous increase in production and export of pulses and emergence of marketing

companies. Then, the government removed the procurement system and introduced the new rice policy in 2003. Accordingly, rice is exported by the private sector with 10% tax on rice exports. However, the Union Government granted tax exemption for export of the some agricultural products such as rice, beans and pulses, corn, sesame and rubber to boosting export according to section 8 of Trade Law by Notification No. 32/2011 on 16 August 2011. But, it shall be in effect for the period of six months from 15 August 2011 to 14 February 2012. As a result, production of agricultural products particularly rice and beans and pulses will be increased and their exports may promote if there is secure market for exports, price incentives and proper supply chain mechanism in the future.

Chapter 4

Impacts of Institutional Changes on Agriculture Sector Development of Myanmar

Myanmar is predominantly an agricultural country. Agriculture sector is the main livelihood for nearly three quarters of the population. In 2009/10 the sector accounted for about 32% of GDP, provided employment to about 66% of the labor force, and contributed approximately 16% of export earnings. Indirectly, the agriculture sector not only provides inputs for processing industries, but is also a growing market for domestic manufactures.

Myanmar's climate, location, and topography are such that farmers can grow a wide variety of tropical and subtropical crops. The main crops are paddy, groundnut, sesame, pulses, cotton, jute, rubber, and sugar-cane. Main exports of agricultural products are pulses, rice, sesame seeds, and rubber.

As its role, played in the economy, the agriculture sector development is coincident with economic development. In most periods, development of the economy as a whole improved with the development of the agriculture sector and vice-versa. Thus, economic development of Myanmar mainly depends upon the agriculture sector development.

In accordance with the predominantly agriculture-based economy, Myanmar government has undertaken the development of agriculture sector through multidimensional aspects. Moreover, the agriculture sector development would promote/support rural development and poverty alleviation scheme which has been conducted by the government and topping the agenda for the country. Specifically, the government has been implementing the agro-based industrialization to be a new modern developed nation.

In fact, development of the agriculture sector depends not only on the institutional environment or policy and planning of the sector such as land policy and ownership rights, freedom to cultivate crops of their own choice and methods they desire; but also on the institutions created specifically for the promotion of agriculture sector such as water and irrigation institutions, land management related institutions, credit institutions, marketing institutions and so on. Governments of the Union of Myanmar have tried to

improve the agriculture sector with institutional changes as changes in their administrative structures.

The objective of the chapter is to analyze the impacts of institutional changes on the agriculture sector in terms of land utilization, farm size, sown area, production, and export of agricultural products during the study period.

4.1 Colonial Period (1886-1948)

After the annexation of Myanmar in 1886, socio-economic conditions in Myanmar changed completely, especially in the agriculture sector. The agriculture system changed from one of subsistence agriculture for self sufficiency to a commercialized export-oriented system¹. There were two major forces in development of the agricultural sector during the colonial period. The external forces were the cessation of export of rice from Carolina to Europe due to the American Civil War which resulted in 90% of Myanmar's rice exports being sent to Europe and the opening of the Suez Canal in 1869 and the reduction of steamer rates. The other force, the internal one, was that the British abolished the prohibition of exports by the Myanmar Kings.

Development of the agriculture sector in Myanmar was due to increase in production and export of paddy/rice which in turn was also due to increase in sown acreage of paddy. Land expansion in Lower Myanmar was the greatest under the colonial period. The agricultural land expansion was possible because of the land policy of the British government which encouraged the cultivation of the virgin land and cultivators had property rights of land i.e. land-holder's right. At that time, the population in Lower Myanmar was so low that incentives for migration from other areas had to be devised; for those who would move from Upper Myanmar to Lower Myanmar with giving an exemption of two years' taxes. When the price of paddy rose from K 50 per 100 baskets in 1870 to K 85 per 100 baskets in 1885, agricultural land expansion became more successful.

There were incentives to induce enough labor to cultivate the vast amount of land available. In addition to the farmers from Upper Myanmar, many Indian laborers were induced to migrate. The agricultural population of Lower Myanmar increased due to

¹ Adas, 1974

natural growth and migration from Upper Myanmar and the seasonal migration of Indian laborers. Since the Indian laborers came only during the agricultural season and returned to India during the summer, it was possible to obtain cheap seasonal labor which was one of the factors facilitating the development of the agricultural sector.

Those laborers who migrated to Lower Myanmar were usually lacking the capital and they obtained credit mostly from the Chettiars. That amount of capital actually helped increase agricultural production during the period.

The agriculture sector development in this chapter is measured by land utilization and farm size, sown acreage, production, yield and export of agricultural products.

4.1.1 Land Utilization and Farm Size

Under the British rule, five different systems of occupying land had been recognized: the squatter, the patta, the lease, the grant and the colony systems. During the colonial period, area of land occupation was about 20 million acres in Myanmar as a whole in 1927/28; especially Lower Myanmar had abundant land compared with the population. The expansion of occupied and cultivated land area was illustrated in Table 4.1.

Table 4.1 Expansion of Cultivated Land Area in Myanmar (1927/28)
(Thousand Acres)

Region	Total Area Occupied	Total Area Cultivated	Total Area Under Rice
Upper Burma	9,081	5,676	2,078
Lower Burma	11,315	10,642	9,622
Total	20,396	16,318	11,700

Source: J.S. Furnivall, *An Introduction to the Political Economy of Burma*, 1957.

As seen in Table 4.1, total cultivated land area was more than 16 million acres. Of this, in Lower Myanmar, it was over 60% of total cultivated areas due to abundant land resources and favorable climate and soil conditions for paddy production. Among which, the area of paddy cultivation was about 80% of total cultivated areas and it increased to 9.6 million acres in Lower Myanmar (more than 80% of total paddy cultivation). Thus, Lower Myanmar was the main source of paddy production and export. During the colonial era, the land use pattern could be observed in Table 4.2.

**Table 4.2 Area Classified by Type of Land (1936/37 – 1940/41 Average)
(Thousand Acres)**

1.	Reserved Forests	19,964
2.	Current Fallows	3,838
3.	Net Sown Area	17,469
4.	Occupied Area	21,307
5.	Not Available for Cultivation	44,518
6.	Culturable Wastes other than Fallows	19,126
	Total Area	104,915

Source: Mya Than, Agricultural Development in Burma, 1979.

The above Table 4.2 shows that the net sown area reached more than 17 million acres during 1936 and 1941. Average farm size was between 10 to 20 acres. Those who owned land hired it out after first dividing it into tiny plots of "tadone htun" or one yoke area (10-12 acres). Increase in land utilization and total sown area was mainly due to the government's land policy and private property rights of land. Moreover, under the British rule, system of occupying land which was very kin to type of land system in feudal days, namely dama-u-gya system, led to possess large size of farm land by farmers who wanted to cultivate as they wish and were enabled.

4.1.2 Sown Area, Production, Yield and Export of Selected Major Crops

During the colonial period, sown acreage and production of agricultural crops increased dramatically as a result of area expansion. In Lower Myanmar, the main crop was paddy, but some changes in crop pattern had taken place in Upper Myanmar. Since 1910, groundnut was introduced and some expansion had taken place in pulses and beans, cotton and maize cultivation. The shifting/ broadcast method of cultivation which was followed during the Myanmar Kings, was replaced in the first decades of the British rule by transplanting and broadcasting techniques¹.

During the colonial period, principal crops were rice and other field crops including millet, sesame, pulses, groundnut, and cotton, alluvial crops, garden crops and palms. Rice was the main agricultural product of Myanmar. Total cultivated area of rice

¹ Adas, 1974

was about 12,000 (000 acres) in 1927/28. Sown acreage of paddy was more than two-thirds of total sown area. Other crops were not significant and some were only introduced at that time. However, the expansion of area especially in paddy was slow since the late 1920s (Appendix 1).

Table 4.3 shows growth of sown acreage of selected major crops. As shown in Table 4.3, increase in sown acreage of paddy was not significant with about 0.6 % in average during 1925-26 to 1940-41. Among crops, pulses, groundnut and sesamum were much grown. Likewise, increase in production of crops was generally in the same direction to the sown areas during this period. Production of agricultural products was more or less fluctuated, but mostly there was no significant change (Appendix 2).

Table 4.3 Growth Rate of Sown Acreage of Selected Major Crops

(Percent)

Year	Paddy	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Rubber
1925-26	1.08	4.62	-7.25	-0.78	-11.27	8.64	33.45	2.19
1926-27	2.07	-2.71	-5.12	6.94	4.91	-3.53	-3.87	7.93
1927-28	-0.82	-0.26	-14.57	22.85	3.25	-1.98	-27.95	8.28
1928-29	3.04	2.58	-13.56	-11.85	10.89	1.00	-2.67	22.52
1929-30	1.26	0.81	-3.38	4.46	-4.73	13.22	5.68	5.63
1930-31	1.32	-2.20	-6.68	7.95	-1.07	7.92	12.03	-1.08
1931-32	-4.07	1.74	41.61	-0.13	-27.85	-8.59	-40.45	-1.01
1932-33	1.55	6.33	-0.10	1.22	28.14	32.40	48.38	-6.12
1933-34	3.01	-10.06	-9.10	-10.53	22.67	0.59	35.57	-3.53
1934-35	-3.25	14.60	4.92	9.79	-2.44	-11.84	2.96	2.72
1935-36	-1.12	1.24	-11.52	22.06	5.68	5.98	14.86	-1.65
1936-37	2.53	-13.67	-4.12	-3.48	13.10	-5.09	1.52	0.19
1937-38	2.59	6.40	2.68	-9.45	19.97	-3.87	8.57	1.58
1938-39	-0.86	2.37	-12.20	-5.05	-6.27	-1.58	-27.19	-2.10
1939-40	0.40	6.88	-3.13	8.86	-9.41	5.73	-14.77	1.31
1940-41	0.70	-3.60	1.72	-1.24	2.64	-5.23	20.41	1.84
Compound Rate	0.59	0.94	-2.49	2.60	3.01	2.11	4.16	2.42

Source: Economic Research Project, 1959.

Average annual growth rates of production of these crops were shown in Table 4.4. Production of pulses, groundnut and sesamum increased at about 3%, 3% and 7% respectively.

Table 4.4 Growth Rate of Production of Selected Major Crops

(Percent)

Year	Paddy	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Rubber
1925-26	-8.8	-4.6	-29.5	-4.1	0.8	-29.3	32.8	19.0
1926-27	10.4	0.3	72.4	9.3	-6.0	-23.2	-17.5	13.9
1927-28	-7.1	3.2	-16.0	17.5	-3.5	47.4	-11.7	5.6
1928-29	1.6	0.5	23.9	-10.8	6.6	-14.5	-24.8	-5.0
1929-30	2.2	-10.4	-39.4	-0.4	17.4	30.4	17.6	5.6
1930-31	2.9	15.9	-2.4	7.6	-4.3	40.3	44.9	-12.4
1931-32	-18.7	-20.2	78.8	4.3	-25.4	-61.3	-63.9	-18.1
1932-33	17.8	-3.4	-28.7	-19.7	16.3	134.5	151.8	-33.9
1933-34	5.2	1.3	1.0	-3.7	-9.8	7.4	53.9	76.1
1934-35	-12.9	49.8	27.5	41.3	-0.2	-28.7	-29.5	18.1
1935-36	11.1	-3.4	-22.6	19.3	5.8	-8.7	32.7	3.6
1936-37	-5.9	-34.0	-34.3	-21.3	-2.3	-19.3	19.2	65.2
1937-38	-2.2	30.4	49.8	-4.6	50.4	32.7	-20.2	0.3
1938-39	17.8	1.5	1.6	-10.4	-9.0	9.9	-10.9	1.2
1939-40	-13.2	0.3	-23.4	5.7	-0.3	-4.7	8.1	5.8
1940-41	16.8	-5.8	29.1	15.2	5.0	10.5	-7.5	27.4
Compound Rate	1.1	1.3	5.5	2.8	2.6	7.7	10.3	10.8

Source: Economic Research Project, 1959.

It showed that increase in production of these crops was mainly due to area expansion. Particularly, yield of paddy was not dramatically improved and hovered around at an average of 30 baskets per acre Table 4.5. It was because there was no significant improvement in technology such as high yielding variety seeds, utilization of fertilizers and farm implements, rather depending only upon weather.

Increase in paddy production due to sown acreage which not only provided food supply to the increasing indigenous population but also increasing exports from 3 to 4 million tons of paddy. It was due to the incentives for cultivation such as tax exemption,

increase in price of paddy and secure market for paddy export. Paddy yield was highest at 34.32 baskets per acre in 1912/13. However, it had declined since 1942/43.

Table 4.5 Sown Acreage, Yield, Production and Export of Paddy

Year	Sown Acre (000' Acres)	Yield (Basket/Acre)	Production (000' ton)	Export (000' ton)
1912-13	10,219	34.32	7,109	2,438
1917-18	10,708	33.60	7,259	1,978
1922-23	10,966	29.27	6,343	2,605
1927-28	11,701	30.13	7,008	3,896
1932-33	12,050	29.50	7,171	3,549
1937-38	12,490	26.59	6,729	3,768
1942-43	10,697	26.30	5,739	-
1947-48	9,265	20.06	5,428	1,271

Source: Ministry of Agriculture, Economic Research Project, 1959.

As seen in Table 4.5, exports of agricultural products were paddy, maize, pulses and cotton. However, other crops except paddy was exported at minimal. Export of paddy started to increase in 1912/13 and it reached its highest level of 3.8 million tons. Accordingly, Myanmar was the largest exporter of rice. The agricultural development was only due to increase in production and export of paddy. Detail information on sown area, yield, production and export is shown in Appendix 3.

During the colonial period, the agriculture sector development was achieved due to expansion of cultivated areas, but not due to yield because there was no or lack of technological change during the colonial period.

The Agriculture Department which was established in 1906, started to breed some varieties, distribute improved seeds, demonstrate the application of fertilizers and other scientific methods of cultivation on a very small scale. The Agriculture College which was supposed to be the pillar of training the students with scientific methods was founded only in the year 1924. However, the degree of mechanization was almost zero and farming only depended upon draught cattle and manual workers and farm laborers.

The changes in the crop pattern was made possible by the expansion of irrigated area during the colonial era when many irrigation projects were implemented along with the expansion of the already existing irrigated projects of the Myanmar Kings.

The agrarian policy of the British government towards Myanmar was to transform the peasantry into small cultivating landowners so as to increase agricultural production and to decrease the possibility of revolt and accordingly the government created an atmosphere to materialize this policy. In practice, the longer the colonial period, the worse were the conditions of peasantry that most of the small scale landowners became tenant farmers and most of the tenants became landless agricultural laborers.

The land of cultivating landowners was transferred into the hands of non agricultural landowners. Similarly, most of the land of resident landowners became the land of non resident landowners and most of the land which belonged to the indigenous landowners was transformed into the hands of foreigner landowners. About 70% of the agricultural land was owned by non agriculturists in Hanthawaddy and Pyapon districts in the Delta¹. According to J.R. Andrus, it was estimated that more than 15% of this land Lower Myanmar was, by 1941, owned by genuine agriculturists and unmortgaged².

Indebtedness was an integral part of a peasant's life in Myanmar during the Colonial era. Many cultivating landowners lost their land due to indebtedness. Agrarian relations were also changed due to the transformation of the subsistence system to commercialization. As a result of the Colonial policy, there came into existence two kinds of landowners: cultivating owners and non cultivating owners. Because of the existence of non cultivating landowners, a new stratum of cultivators came into life- the tenants.

The relationship between the landowner and the tenants caused agrarian problems. Since there was inequality in ownership, the landowners became powerful and strong in relation to tenants. On the other hand, along with the population increase, the number of cultivators who wanted to be tenants and agricultural labors grew, and for that reason, the landowners had got the upper hand in relation to them. Furthermore, the change from domestic agriculture to commercial agriculture led to new relations between landowners, cultivators, laborers and capitalists both in Upper and Lower Myanmar.

Moreover, due to the instability in production and prices, the tenants required more credit and this made landowners and money lenders more and more powerful. This

¹ Binns, 1948

² Andrus, 1948

vis-à-vis between landowners and tenants became weaker especially when other opportunities for employment decreased with the disappearance of village common pasture, firewood, the system of redistribution of income in village community.

The colonial agricultural laws were ineffective and protected the landowners and therefore the loyalty of tenants and agricultural laborers was no longer needed. Those laws enabled the landowner class to exploit more and more upon tenants and agricultural laborers. Thus, the tenants and agricultural workers became poorer and poorer.

Concerning the tenancy situation, the tenants cultivated 49% of the total cultivated area. When, in the 1930s, the price of paddy declined the clash of interest between the landowners and the tenants became more acute. There was no security for tenants and the landowners could change tenants after every season. Some of the small landowners had to give up their land because their debts were more than they could bear. And the rents became higher and the tenants could not afford to pay them¹. Thus, many tenants became agricultural laborers.

The socio-economic condition of the agricultural laborers was not better than that of tenants, because wages decreased by the 1920s due to surplus of agricultural laborers. Thus, during the colonial era, the socio-economic situation of the small landowners, tenants and agricultural laborers grew worse and worse while export earnings increased year by year, to the benefit of foreigners and their companies. And these in turn led to the outbreak of Saya San's Peasant Rebellion.

The level of political and general knowledge of rural population was so low that the political power was vested in the hands of foreigners and some indigenous landowners. The laws protecting the farmers' rights were introduced only before the foreigners left.

In conclusion, it is obvious that great physical expansion of agricultural production was attributable to the area expansion rather than technological improvements. The area expansion especially for paddy was mainly because of the British government's land policy and private property rights of land. Moreover, immigration of labor, availability of credit and export promotion with the opening of Suez Canal all incorporated to production of paddy.

¹ BSPP, 1970

Again, increase in export of paddy during this period was mainly due to secure export market for paddy and the government's free trade policy. And although the agricultural development of the colonial era contributed increased food and foreign exchange, there was no improvement socially, politically and economically in the rural sector. Instead, the agricultural development benefited foreign capitalists. It was mainly due to controls of pricing and marketing by the foreign traders. Furthermore, it was found that the high rate of taxation was burden for the cultivators¹. As a result, face-less mechanism of Laissez Faire policy, improper credit institutions, monopolization of pricing and marketing by capitalists were causes of major agrarian problems – indebtedness, land alienation and insecurity of tenancy at the end of the colonial period.

4.2 Parliamentary Democracy Period (1948-1962)

After gaining independence in 1948, Myanmar government continued to adopt the laissez faire policy. The agriculture sector had suffered seriously during the World War II. The production fell to the lowest level. Although there was a plan for the agriculture sector in 1943/44, it was not implemented. Due to the problems of landlessness and indebtedness of farmers at the end of the colonial period, the Land Nationalization Act was passed in 1948 as part of the agrarian reform and the land Committee behalf of the government redistributed land to poor farmers. As a result, land-holdings of farmers became small. The farmers had control over their land and they decided the crops and the planning acreage. On the other hand, the government made attempts for the State monopolization of trade in farm products and price control.

4.2.1 Land Utilization and Farm Size

The dominant reason why the government was unable to restore the prewar level of agricultural output was that in the post independence period, area of agricultural land was less than that of the pre-war period. The land use pattern is described in Table 4.6. The insurgency problem, destruction of irrigation works during the War and lack of capital were the reasons why the agricultural land declined after independence. In

¹ Aye Hlaing, 1964

1953/54, the total net sown area decreased to 15 million acres and it reached to the pre-war level in 1961/62, at the end of the period.

Table 4.6 Area Classified by Type of Land

		(Thousand Acres)	
	Type of Land	1953/54	1961/62
1.	Reserved Forests	19,369	19,311
2.	Current Fallows	6,044	7,219
3.	Net Sown Area	15,131	17,698
4.	Occupied Area	21,175	24,918
5.	Not Available for Cultivation	40,852	83,109
6.	Culturable Wastes other than Fallows	19,205	23,303
	Total Area	100,601	150,551

Source: Mya Than, Agricultural Development of Burma, 1979, p.22.

The post-independence land reform started with the introduction of the Land Nationalization Act of 1948 and was implemented in 1953/54. According to the act, the following lands were to be resumed: (1) all agricultural lands owned by non-agriculturists; (2) all lands owned by agriculturists in excess of 50 acres; (3) tenanted land in excess of "one yoke" area. The resumed areas were then to be distributed to qualified cultivators-applicants. But it was not implemented as expected due to the political situation and the lack of trained and honest staff.

According to the following Table 4.7, less than 10 acres were owned by 58.2% of farmers and 29.5% of total areas in 1953/54. However, it increased to 82.9% of farmers and 59.9% of total area in 1961/62. The average farm size in 1953/54 was 10.1 acres and reduced to 6.2 acres in 1961/62¹. That confirmed that the land fragmentation took place all over the years due to the land policy of government and the law of inheritance.

¹ Mya Than, 1979

Table 4.7 Size Distribution of Agricultural Land**(Percent)**

Size of Land	1953/54		1961/62	
	Farmers	Area	Farmers	Area
Less than 5 acres	58.2	29.5	82.9	59.9
5-10				
10-20	30.6	38.3	12.7	29.5
20-50	1.2	32.2	3.41	17.6
50 & above				

Source: Report to the People and Report to the Pyithu Hluttaw, 1956/57 and 1965/66.

4.2.2 Sown Area, Production and Export of Selected Major Crops

Sown area and production of agricultural products fluctuated during this period. These were shown in Appendix 4 and Appendix 5. During this period, crops items were extended, and wheat, sugarcane and other crops were sown. The main crop was paddy and its sown area was still 65% of total sown area and it reached about 10 million acres in the late 1950s. Sown area of wheat, sugarcane and jute were minimal and for millet and maize, sown areas declined during the period. However, cultivation of pulses, groundnut and cotton increased. In comparison with the colonial period, sown acreage of many crops such as paddy, maize, pulses and cotton were lower than that of colonial period.

In the production side, the volume of paddy output was 71% of the volume of total crops. Paddy production in the post independence was very low without any substantial increase in yield or volume. It increased over 6 million tons in the years of 1958/59, 1959/60 and 1960/61 mainly due to increase in sown areas in those years. However, production of other crops did not improve dramatically except groundnut, jute and rubber. These increased slightly and reached at the highest in 1960/61.

There was a very slow growth in sown acreage and production of these crops. It was less than that of pre-war level because of political situation, and inadequate farm inputs and implements. The growth rates of sown acreage of selected agricultural crops were shown in Table 4.8. Growth rate of sown area of paddy was only about 1.5% and others were not high, even for millet, it was negative. However, cotton, jute, rubber and sugarcane were high growth rate, especially for jute at more than 100% rate of growth.

Table 4.8 Growth Rate of Sown Acreage of Selected Major Crops

(Percent)

Year	Paddy	Wheat	Millet	Maize	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1947-48	16.4	-	-6.3	-	13.8	27.2	10.5	29.8	-	-	21.1
1948-49	5.5	-	3.2	-	-0.2	-3.2	-0.7	-1.4	-	-	21.7
1949-50	-11.0	-	1.0	-	2.8	-1.0	-2.5	-2.7	-	-	-19.6
1950-51	1.5	1.5	6.3	6.8	-2.1	-1.0	-2.2	1.9	-	0.9	-6.7
1951-52	3.4	3.4	-1.6	0.0	-0.6	4.0	0.8	13.8	-	0.9	28.6
1952-53	4.9	4.9	-2.9	10.3	8.5	2.2	-0.3	15.8	-	1.7	20.4
1953-54	2.1	2.1	-4.8	-13.8	4.8	11.8	1.8	4.5	20.0	0.0	35.4
1954-55	-3.1	-3.1	-1.6	-7.3	2.5	-4.1	2.5	7.0	75.0	0.0	-33.0
1955-56	1.9	1.9	-0.2	-2.2	-7.9	5.2	2.6	33.1	147.6	0.8	11.9
1956-57	0.6	0.6	-8.2	-1.7	2.9	3.1	2.0	-6.8	-55.8	1.7	33.3
1957-58	-2.2	-2.2	-3.3	3.5	4.3	2.8	-3.4	-12.1	-26.1	0.8	3.4
1958-59	2.5	2.5	0.4	0.6	6.3	10.5	-0.1	-0.3	829.4	0.8	-3.3
1959-60	2.7	2.7	-16.5	-15.1	12.8	7.4	-4.5	6.3	31.6	7.3	-23.9
1960-61	0.4	0.4	-2.9	12.5	5.9	13.8	6.0	0.3	-8.2	6.1	9.0
1961-62	11.0	11.0	12.1	16.4	-2.3	17.3	8.0	24.8	25.7	10.7	30.1
Compound Rate	1.5	2.2	-1.4	0.8	2.7	4.9	0.7	6.0	115.5	31.7	7.7

Source: Economic Survey of Burma 1953, 1954, 1958, 1962, 1964 and Statistical Yearbook 1960 and 1965.

Growth rate of production for paddy was about 2.2% during 1947-48 to 1961-62 as seen in Table 4.9. High growth rate of production were in wheat, pulses, jute and cotton. Accordingly, yields of agricultural products did not increase significantly, as shown in Table 4.10.

During this period, there were no impressive improvements in sown area, production and yield of agricultural products. Sown area and production were much less than those in the pre-war level and reached to the pre-war level at the end of this period. It was because not only the severe destroys of the war, insurgencies and instabilities in the country but also inadequate farm inputs and implements.

Thus, it can be concluded that agricultural production was mainly dependent on sown areas during this period. There were no measures that support for the agricultural production. As a result, yields were not improved. Exports of agricultural products were rice, pulses, Maize, cotton and rubber (Table 4.11). Of which, rice and rice products was main export items and decreased dramatically ranging from 30% to 50% during this period. Exports of other crops were only little. In terms of value of export, as mentioned in Table 4.12 export income from rice and rice products were more than 70% of total export value.

During the parliamentary democracy period, improvement in the agriculture sector cannot be found. It was due to the fact that besides some events and factors as mentioned above, there was no any institutional development. Agrarian reforms during that period such as enactment of Land Nationalization Act and Land Redistribution Programme led to small farm size. Landless farmers faced lack of capital to work on their farms, with utilization of inadequate amount of farm inputs such as fertilizers and under utilization of farm machinery and equipment.

Also the government could not provide adequate amount of agricultural credit. Agricultural research and extension facilities were not effective. There was no improvement in irrigation and water supply facilities. Even draught cattle and farm implements were not sufficient for the existing cultivation. Regarding the marketing policy, although the government permitted to exchange rice in the domestic market, the government set the procurement price which was lower than the market price for export. It was disincentive for farmers to rice export.

Table 4.9 Growth Rate of Production of Selected Major Crops

Year	Paddy	Wheat	Millet	Maize	Pulses	Groundnut	Sesamum	Jute	Cotton	Rubber	Sugarcane
1947-48	41.5	-	40.4	68.4	60.9	48.5	28.1	-	100.0	-	3.4
1948-49	-5.1	-	7.6	-3.1	152.7	-5.9	2.4	-	0.0	-	-25.5
1949-50	-11.3	130.0	-34.1	-12.9	-6.4	-20.1	-23.8	-	-12.5	-	14.7
1950-51	18.0	3.3	42.1	11.1	10.3	28.7	21.9	-	157.1	-	20.6
1951-52	3.7	11.6	-9.2	-3.3	-8.3	18.9	23.1	-	11.1	6.3	-1.2
1952-53	4.3	-1.9	23.5	13.8	7.9	0.0	12.5	-	10.0	2.9	2.9
1953-54	-2.8	-7.7	-8.3	15.2	5.2	8.5	-18.5	64.7	0.0	-5.7	7.5
1954-55	-0.5	-8.3	-1.8	-36.8	-1.5	-19.4	-18.2	128.6	4.5	34.3	-20.7
1955-56	1.0	14.8	2.5	8.3	15.7	32.5	22.2	-21.9	-21.7	-7.5	-6.7
1956-57	10.0	5.9	2.2	-11.5	2.6	-4.9	25.0	80.0	-11.1	1.6	24.7
1957-58	-15.4	1.9	-16.1	52.2	-15.3	19.1	-38.2	-58.9	-31.3	-6.4	23.8
1958-59	24.1	-1.8	-1.4	-37.1	6.0	21.2	50.0	643.2	0.0	15.4	-20.0
1959-60	4.6	-9.3	-0.5	13.6	16.1	-8.6	29.4	6.2	9.1	37.0	-3.4
1960-61	-0.4	-24.7	-4.1	68.0	5.3	43.0	-3.0	117.1	-8.3	5.4	2.1
1961-62	0.8	187.7	29.5	0.0	0.8	2.5	17.2	-0.9	45.5	-23.1	11.1
Compound Rate	2.2	21.5	2.3	5.5	13.7	8.2	7.3	68.4	10.9	4.3	2.1

Source: Economic Survey of Burma 1953, 1954, 1958, 1962, 1964 and Statistical Yearbook 1960 and 1965.

Table 4.10 Yield of Selected Major Crops

(Basket/Acre)

Year	Paddy	Wheat	Maize	Gram	Pegyri	Groundnut	Sesamum	Cotton
	46 lb	72 lb	55 lb	72 lb	72 lb	25 lb	54 lb	(Viss)
1949-50	29	5	9	6	4	27	2	26
1950-51	29	4	10	5	5	19	2	19
1951-52	29	4	9	5	5	19	2	19
1953-53	30	4	10	6	4	19	2	26
1953-54	28	3	10	5	5	19	2	19
1954-55	29	3	9	4	4	15	2	19
1955-56	29	4	10	5	4	19	2	26
1956-57	31	4	10	5	5	18	2	26
1957-58	27	4	10	5	5	16	2	32
1958-59	33	3	9	5	5	16	2	26
1959-60	33	4	10	6	6	17	2	26
1960-61	33	4	12	4	6	27	2	26
1961-62	31	5	13	4	7	26	3	31

Source: Statistical Yearbook 1960 and 1965.

Table 4.11 Volume of Exports of Major Crops

(Thousand Tons)

Year	Rice & rice products	Pulses	Maize	Cotton	Rubber
1948-49	1,194	36	3	1.2	6
1949-50	1,230	33	6	5.5	9
1950-51	1,304	45	8	13	12
1951-52	1,292	78	18	16	13
1952-53	1,027	80	35	22	25
1953-54	1,531	98	20	18	17
1954-55	1,671	108	16	17	13
1955-56	1,914	72	25	20	23
1956-57	1,838	98	18	13	10
1957-58	1,468	75	26	8	7
1958-59	1,776	110	21	9	12
1959-60	1,798	100	16	15	16
1960-61	1,619	106	25	10	11
1961-62	1,842	108	22	19	11

Source: Statistical Yearbook 1960 and 1965.

Table 4.12 Value of Exports of Major Crops

(Million Kyats)

Year	Rice & rice products	Pulses	Maize	Cotton	Rubber	Total Exports
1948-49	595	17	n.a	n.a	3	727
1949-50	638	16	1	22	10	729
1950-51	723	27	3	46	27	941
1951-52	991	37	7	40	27	1250
1952-53	848	44	10	61	25	1129
1953-54	953	47	5	50	25	1190
1954-55	817	41	4	39	35	1076
1955-56	867	29	7	51	44	1185
1956-57	809	50	4	25	38	1081
1957-58	683	41	6	16	27	918
1958-59	754	51	5	22	36	1062
1959-60	722	42	4	37	41	1063
1960-61	712	45	6	28	23	1046
1961-62	852	60	5	41	28	1272

Source: Statistical Yearbook 1960 and 1965.

Since there was no improvement in technology during these years, the increase in slow production was attained through expansion of sown area. "Burmese agriculture remains static, unawakened by the advent of modern technology"¹. Thus, it can be concluded that agricultural production had increased mainly due to sown areas. There existed the disguised unemployment or under-employment in the rural areas in the post independence period. It was obvious that there was no substantial change in technology.

Moreover, fertilizer utilization increased slightly, but had not reached the required amount. Utilization of tractors was not ineffective and the number of draught cattle was decreasing, which was a constraint for multiple cropping. Thus, the degree of mechanization was minimal and farmers were still using outdated traditional methods of cultivation and farm implements. The static nature of agricultural production in the post independence era was caused by unskilled planners, instability in world rice prices and the exploitation by the political party in power.

¹ Khin Maung Kyi, 1975

All of the agricultural plans of the post independence era were aimed to abolish large land landholders along with large scale capitalist farmers and to distribute the land to the tillers. The government introduced the land reform in 1953/54. To support the action, further steps such as to form mutual aid teams and then cooperatives were to be organized. However, the agrarian situation was one of low-yielding small holder production with no great change in its techniques from pre-colonial times. Much altered in its ownership and marketing structure, there were no large landholders in the western sense. Almost half of the area was under tenancy and most of the non-agriculturist landholders were not interested in reinvestment in the farms. There were practically no technically modern farmers in Myanmar at the time of independence.

Although one of the aims of the Land Reform was to protect land from falling into the hands of non agriculturists and large landholders, the land owned by the non agriculturists had increased¹. On the other hand, since the landowners who owned less than 50 acres, were exempted from the act, all lands belonging to the large landholders were divided on paper among their close relatives, and thus avoided the nationalization. Similar weak points existed in the reform so that it was possible for the large landholders to avoid the government's actions. Thus, the Land Reform did not benefit the poor small farmers.

The aim of the AFPFL government was to create a new small landowner class and a new stratum of rich farmers rather than to implement the policy of "land to tiller". The measures for land nationalization had to stop after 1958/59. The actual weakness of the land reform lies with the lack of serious commitment at the higher level of policy makers, poor technical design of enactments, failure to provide the necessary follow-up supporting systems of services to beneficiaries, and finally the lack of sound organization among beneficiaries.

The post independence landowner-tenant relation was little better than that in prewar days. After the government announced the Tenancy Act and the flight of Chettiers to India, the position of landowner vis-à-vis tenants was weakened. However, since their representatives were at every level in the ruling party, they exploited the tenants in other ways as "sabapay", "pintaung" (advance payments with interest in kind), higher rents etc.

¹ BSPP, 1970

the situation depends upon the locality where the representatives of the landowner class were strong or not. Some tenants became landholders as a result of the Land Nationalization Act. Fifty percent of the total agricultural land was tenanted in the colonial era and after 15 years of independence, in 1962, only 30% were tenanted. The condition of the agricultural laborers was worse than tenants because increase in the general price level was higher than increase in the wage rate. According to a survey in (Bago) Pegu District in 1960, 86% of the cultivators were still in debt and either to government or private money lenders.

In sum, the agricultural development during the post independence period was static and the slow growth in production was achieved only due to area expansion rather than increased productivity. The other institutional factors which prevented the agricultural development were national unrest, political instability, lack of proper land reforms and lack of a proper credit system. Consequently, agricultural production and farmers' conditions did not improve during this period.

4.3 Socialist Period (1962-1988)

Soon after the Revolutionary Council took over in March 1962, the rural development program, aiming to abolish landlordism and to uplift the socio-economic conditions of peasantry based upon socialist principle, was announced and begun with agricultural related objectives¹.

By decreeing the Tenancy Law of 1963, the right to tenant the land was vested in Agrarian Committee composed of farmers themselves. Farmers' Rights Protection Law of 1963 protected the rights of all cultivators, and the Tenancy Law Amending Law of 1965 abolished the tenancy rent which was the most progressive step in the agrarian history of Myanmar. The volume of agricultural loans was much more than that of post independence. The Revolutionary government also introduced scientific methods of cultivation in agriculture. And thus the level of production in the first years of the Revolutionary government was restored to the prewar level. Then, the agricultural transformation from stagnancy to breakthrough stage started in 1973/74.

¹ BSPP, 1970

4.3.1 Land Utilization and Farm Size

Because of the increasing pressure on land and the limited opening of new land and also due to the shortage of draught cattle, area expansion has been carried out through multiple cropping. Total area of land utilization merely increased than in post independence period. According to Table 4.13, net sown area was about 19 million acres in 1962/63 and it increased to about 20 million acres in 1975/76. However, average farm size during this period was still low at 5.87 acres in 1965/66 and further declined to round about 5.2 acres in 1978/79¹. It was due to the government's land policy.

Table 4.13 Area Classified by Type of Land

		(Thousand Acres)	
	Type of Land	1962/63	1975/76
1.	Reserved Forests	21,604	23,477
2.	Current Fallows	4,910	4,881
3.	Net Sown Area	19,003	20,088
4.	Occupied Area	23,913	24,969
5.	Not Available for Cultivation	103,264	7,890
6.	Culturable Wastes other than Fallows	12,556	21,119
	Total Area	161,336	167,186

Source: Report to the Pyithu Hluttaw, 1965/66- 1978/79.

Table 4.14 shows farm size condition during this period. As seen in the table, the number of farmers owned by less than 5 acres was about 62.4% of total farmers and 25.1% of total sown area in 1973/74. It slightly improved with 61.5% and 24.5% respectively in 1987/88. However, it can be said that farming system was still small scale and about two thirds of farmers had very small amount of land which was not subsistent for farmers. Extremely, the farmers who owned more than 50 acres were very scarce.

¹ Mya Than, 1979

Table (4.14) Size Distribution of Agricultural Land

(Percent)

Size of Land	1973/74		1987/88	
	Farmers	Area	Farmers	Area
Less than 5 acres	62.4	25.1	61.5	24.5
5-10	24.0	31.4	24.7	32.2
10-20	10.9	28.5	11.4	29.5
20-50	2.6	13.1	2.4	12.9
50 & above	0.05	1.0	-	1.0

Source: Report to the Pyithu Hluttaw, 1975/76- 1989/90.

4.3.2 Sown Area, Yield, Production and Export of Selected Major Crops

The prewar level of sown area was restored in 1961/62 and that level was sustained throughout this whole period since 1962. Generally, sown acreage of both paddy and pulses shows no significant change during this period. However, sown acreage of paddy had increased slightly since 1974/75, but it had declined since 1980s. Cultivation of pulses increased in 1970s, then declined in early 1980s and then in turn increased in the late 1980s. Sown acreage of other crops such as wheat, maize, groundnut and cotton increased during this period.

Changes in sown acreage and production of major agricultural products during 1962/62 and 1987/88 were illustrated in Appendix 6. Generally, sown acreage of both paddy and pulses shows no significant change during this period. Production of paddy and pulses increased markedly from 1977/78 onwards (Appendix 7). It was because of the significant increase in yields. Apart from price incentives, other factors responsible for the improved production of agricultural products were the increase in net sown area, mixed and multiple cropping areas, irrigated area, and increased use of agricultural inputs. However, from the early 1980s onwards, the government set procurement price of paddy and other important crops to lag behind free market prices. Meanwhile, the impact of the "Green Revolution" effects decreased and agricultural production including paddy decreased. In the case of other crops, however, significant gains in production seem to have resulted from the expansion of sown acreage.

The growth rate of sown area of selected major crops is shown in Table 4.15. Growth of sown area of paddy was very minimal, but sown areas of jute, wheat, sugarcane and maize were grown significantly. As seen in Table 4.16, the growth rate of paddy production increased, particularly during 1973/74 to 1985/86. As yield of paddy, significant increase was seen since 1975/76. It was greatly the effect of green revolution, contributing to high yield variety of rice. Apart from this, government's support of extensive facilities, providing credit, encouraging irrigation facilities and collective and active participation of government organizations and farmers were great part of this success.

Growth rates of production of other crops also increased dramatically during the whole period. However, yields of other crops such as wheat, maize, pulses, jute, rubber and sugarcane had slightly increased since 1983 (Table 4.17).

During the socialist period, volume of export had declined since 1965-66. In Table 4.18, volume of export for all crops decreased. Particularly, cotton was very low and jute and rubber were not stable. Main export was rice and rice products and it had significantly decreased since 1965/66. It reached very low in 1972/73 at about 150 thousand tons and it again increased in 1974/75. However, it declined since 1984/85. It reflected the growth of yield and production of paddy during 1974-75 to 1984-85. Export of pulses decreased gradually since 1965/66.

Accordingly, the value of export of agricultural products is shown in Table 4.19. Value of paddy exports started to decline since 1965/66 and increased again since 1973/74 till 1984/85. Paddy was the main source of export income. However, its share declined from more than 60% of total export in 1962/63 to 12% in 1972/73. It increased again since 1974/78, but decreased since 1986/87. For pulses, export value had increased since 1978/79 and its share was about 7% in average during 1974/75 to 1985/86.

Table 4.15 Growth Rate of Sown Acreage of Selected Major Crops

Year	Paddy	Wheat	Maize	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1962-63	3.4	65.3	0.0	23.7	10.2	2.9	18.8	116.7	18.7	23.2
1963-64	4.4	34.6	75.9	8.5	-2.9	2.2	22.5	3.8	12.0	-17.1
1964-65	1.2	36.7	2.0	-13.3	-10.7	21.7	-8.8	-1.9	3.4	23.7
1965-66	-1.8	37.2	-5.6	6.0	-1.2	1.9	-7.8	35.8	0.5	19.2
1966-67	-0.5	-9.0	22.8	3.6	-13.9	-4.4	-14.1	-4.2	0.9	8.4
1967-68	-1.1	-36.8	11.1	-8.6	11.2	7.3	8.0	26.1	1.4	-5.8
1968-69	1.7	-35.7	-1.5	8.4	19.9	-0.6	-26.0	13.8	0.5	11.0
1969-70	-1.3	9.9	0.0	-6.9	0.0	10.8	-6.9	5.1	-0.5	-37.7
1970-71	1.3	26.5	-8.8	7.1	0.1	-8.7	20.7	8.7	0.5	130.7
1971-72	-0.8	-25.7	-39.5	6.2	10.7	11.2	26.8	100.0	-2.7	17.2
1972-73	-2.3	-12.2	-6.0	0.3	-6.6	-1.6	-4.0	27.4	0.0	7.0
1973-74	4.7	13.9	-6.8	-9.3	4.8	17.9	-0.9	1.0	-0.5	-19.5
1974-75	1.7	45.5	-1.8	5.8	1.7	-1.5	2.8	-42.6	-0.9	-10.2
1975-76	0.5	2.2	-0.9	-7.2	1.8	-5.9	-5.2	-11.4	-1.9	17.1
1976-77	-2.4	0.4	-6.6	0.6	-11.1	6.7	-21.8	-8.1	-1.4	1.6
1977-78	1.1	0.9	9.0	5.0	-1.7	2.5	0.7	29.4	0.0	4.0
1978-79	2.1	-8.1	3.2	3.4	-7.0	14.5	13.8	45.5	-1.0	1.9
1979-80	-4.1	-4.6	12.1	-4.9	-12.9	-17.0	4.1	2.0	0.0	-11.3
1980-81	2.0	48.5	49.0	13.6	5.9	26.1	13.8	-4.2	-1.0	5.1
1981-82	-0.5	-16.0	1.9	9.1	16.3	4.8	2.6	-51.2	-0.5	10.1
1982-83	-4.3	6.6	10.8	-10.9	-4.5	0.5	-4.1	38.5	-1.0	5.1
1983-84	-1.0	29.2	21.6	13.9	-1.9	-2.8	4.7	-1.8	-1.0	-3.8
1984-85	1.8	-8.8	10.1	-28.3	15.4	12.1	10.1	-2.4	-0.5	9.1
1985-86	-0.3	-8.4	-12.9	36.0	-7.9	-5.9	-14.1	-6.8	-2.1	-45.2
1986-87	-1.2	-1.0	-10.2	-32.7	-5.2	-18.5	-11.5	-16.6	1.1	-8.5
1987-88	-3.7	7.5	-10.6	-4.4	-4.8	3.1	-9.8	-17.5	0.5	-11.9
Compound F	0.02	7.64	4.55	0.96	0.22	3.06	0.56	10.97	0.94	4.74

Source: CSO, 1965 and 1993; Review of the Financial, Economic and Social Conditions, 1978-79, 1986-87.

Table 4.16 Growth Rate of Production of Selected Major Crops

Year	Paddy	Wheat	Maize	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1962-63	10.94	52.38	54.76	24.23	13.33	10.67	237.50	59.24	-6.67	11.49
1963-64	1.54	59.38	10.77	11.15	-22.12	-37.35	-3.70	10.00	-7.14	-13.77
1964-65	9.32	39.22	-26.39	-22.56	1.81	88.46	28.85	-18.18	-76.92	-2.65
1965-66	-5.33	-8.45	-11.32	0.00	-16.02	-42.86	-32.84	55.56	-33.33	-60.26
1966-67	-17.60	1.54	12.77	-21.22	-3.53	0.00	-6.67	-7.14	450.00	267.22
1967-68	17.07	-24.24	20.75	20.55	33.70	89.29	14.29	69.23	9.09	-8.61
1968-69	3.26	-58.00	-4.69	19.32	7.40	-22.64	-33.33	-4.55	0.00	-9.56
1969-70	-0.47	57.14	-22.95	-14.60	11.48	21.95	6.25	4.76	8.33	0.31
1970-71	5.99	130.30	27.66	17.47	-5.26	-15.00	26.47	9.09	0.00	8.21
1971-72	-3.41	-65.79	-5.00	-8.86	15.46	30.59	-2.33	170.83	7.69	14.96
1972-73	-10.00	0.00	-3.51	-14.58	-21.13	-37.84	2.38	35.38	7.14	24.53
1973-74	16.92	-7.69	10.91	-1.63	7.43	120.29	-13.95	-11.36	0.00	-16.95
1974-75	-0.21	162.50	4.92	4.13	13.33	-38.16	13.51	-50.00	0.00	-28.66
1975-76	7.27	-11.11	-6.25	-7.14	-11.98	40.43	-11.90	-5.13	-6.67	36.29
1976-77	1.21	33.93	-5.00	11.54	2.97	-31.06	-16.22	-27.03	7.14	-0.93
1977-78	1.54	22.67	29.82	21.84	9.86	19.78	32.26	103.70	0.00	10.19
1978-79	11.26	-55.43	2.70	2.52	-15.97	88.99	24.39	70.91	0.00	2.78
1979-80	-0.76	117.07	63.16	7.06	-12.24	-47.57	-3.92	1.06	0.00	-20.64
1980-81	29.51	31.46	34.68	16.62	29.97	45.37	51.02	4.21	6.67	41.52
1981-82	6.23	5.98	23.35	26.54	30.82	14.65	29.73	-65.66	0.00	34.45
1982-83	1.60	4.84	16.02	-5.05	-4.01	10.00	3.13	88.24	6.25	35.93
1983-84	-0.59	64.62	29.29	27.40	-3.27	4.55	5.05	-14.06	-5.88	-1.53
1984-85	-0.22	-3.74	-1.94	-22.31	25.38	22.22	21.15	-5.45	0.00	2.87
1985-86	-1.15	-9.22	-2.97	26.24	-17.39	-3.56	-22.22	-5.77	-6.25	-2.63
1986-87	0.25	2.67	-3.06	-19.64	-1.27	-18.44	-18.37	-4.08	0.00	-9.54
1987-88	-3.47	-18.23	-21.40	-5.50	-4.60	-14.57	-8.75	-10.64	0.00	1.51
Compound Rate	3.10	20.15	8.73	3.60	2.47	11.47	12.38	17.43	13.83	12.17

Source: CSO, 1965, 1993: Review of the Financial, Economic and Social Conditions, 1978-79, 1986-87.

Table 4.17 Yield of Selected Major Crops (1962-88)

Year	(Hasket/Acre)											
	Paddy	Wheat	Mize	Black gram	Green gram	Pigeon Pea	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugercane
	46 lb	72 lb	55 lb	72 lb	72 lb	72 lb	25 lb	54 lb	(Viss)	(Viss)	lb	(Ton)
1961-62	31	5	13	7	n.a	n.a	26	3	31	182	370	12
1962-63	31	7	9	7	4	5	20	2	18	158	350	13
1963-64	33	8	12	8	4	6	23	2	23	139	320	12
1964-65	31	8	11	8	3	4	23	2	73	139	300	12
1965-66	29	6	11	8	4	4	22	2	22	156	220	13
1966-67	32	7	12	7	3	4	26	3	24	183	230	13
1967-68	32	7	12	5	3	4	26	3	72	183	224	13
1968-69	33	6	12	5	3	5	24	2	67	168	228	13
1969-70	33	7	11	5	3	5	27	3	69	179	234	13
1970-71	33	8	11	6	3	5	27	3	66	176	254	13
1971-72	33	7	12	6	3	5	26	3	59	205	267	14
1972-73	32	7	11	6	3	4	22	2	64	213	273	14
1973-74	34	6	12	6	3	5	23	3	55	213	274	14
1974-75	34	9	13	6	3	5	25	2	62	212	276	13
1975-76	36	8	13	5	3	5	22	3	59	219	272	14
1976-77	37	11	13	7	4	6	26	3	63	205	286	15
1977-78	38	13	15	8	4	5	29	3	79	238	288	14
1978-79	41	6	15	7	4	5	27	4	78	251	289	15
1979-80	46	14	21	10	6	8	27	3	86	256	295	14
1980-81	54	14	19	9	4	5	32	4	95	269	303	18
1981-82	57	17	24	9	5	7	37	4	118	241	308	21
1982-83	61	16	29	11	7	7	36	4	124	270	349	25
1983-84	59	20	28	12	7	8	44	5	90	262	322	26
1984-85	60	22	26	12	7	8	45	5	97	257	323	25
1985-86	60	21	28	12	7	8	44	5	100	273	331	25
1986-87	59	21	29	14	7	8	45	5	105	279	330	25
1987-88	59	16	27	14	8	9	45	6	101	282	328	25

Source: CSO, 1965 and 1993; Review of the Financial, Economic and Social Conditions, 1978-79, 1986-87.

Table 4.18 Volume of Exports of Selected Major Crops

(Thousand Tons)

Year	Rice & rice products	Pulses	Maize	Cotton	Jute	Rubber
1962-63	1,620	128	25	18	1.9	10
1963-64	1,445	75	8	9	1.4	7
1964-65	1,255	167	14	15	1	7
1965-66	989	80	13	6	0.8	7
1966-67	648	89	12	5	0.7	4
1967-68	347	65	11	2	3.1	5
1968-69	363	47	7	*	1.5	14
1969-70	627	55	10	*	1	7
1970-71	749	58	13	*	4	9
1971-72	560	64	16	0	23	11
1972-73	150	82	5	*	47	10
1973-74	211	30	3	0	44	4
1974-75	302	34	4	0	24	7
1975-76	646	24	6	0	6	4
1976-77	679	28	18	0	1	6
1977-78	369	28	10	0	27	10
1978-79	617	51	8	0	23	15
1979-80	771	62	20	1	21	10
1980-81	692	70	10	*	65	10
1981-82	701	85	23	1	20	13
1982-83	711	102	33	1	4	11
1983-84	906	64	17	2	0	9
1984-85	634	65	26	1	2	8
1985-86	594	89	22	2	0	11
1986-87	604	86	15	1	0	10
1987-88	320	73	20	*	0	6

* less than 1 thousand ton.

Source: CSO, Statistical Yearbook, 1965-1993.

Table 4.19 Value of Exports of Selected Major Crops

(Million Kyats)

Year	Rice & rice products	Pulses	Maize	Cotton	Jute	Rubber	Total Export
1962-63	784	72	n.a	37	2	26	1266
1963-64	761	44	n.a	22	1	17	1121
1964-65	633	97	4	37	2	19	1066
1965-66	563	50	n.a	17	1	17	931
1966-67	375	50	3	13	1	9	587
1967-68	238	43	2	4	4	9	525
1968-69	235	33	2	*	2	27	625
1969-70	278	40	3	*	2	13	512
1970-71	279	41	4	*	6	15	603
1971-72	234	52	5	0	30	18	646
1972-73	89	71	2	*	50	24	690
1973-74	394	47	2	0	38	14	941
1974-75	481	69	4	0	38	20	1020
1975-76	730	66	4	0	9	18	1304
1976-77	838	68	14	0	1	33	1577
1977-78	514	63	7	0	65	60	2051
1978-79	917	106	8	2	45	111	2565
1979-80	1214	126	18	7	41	74	2679
1980-81	1338	152	11	4	99	82	3225
1981-82	1491	249	21	9	28	81	3432
1982-83	1121	264	31	8	5	60	3003
1983-84	1367	213	19	20	0	62	3386
1984-85	1011	215	29	15	5	68	3134
1985-86	763	238	15	18	0	56	2654
1986-87	520	183	8	9	0	47	2419
1987-88	248	131	11	2	0	32	1655

* less than K 1million.

Source: CSO, Statistical Yearbook, 1965-1993.

The agricultural transformation from stagnancy to breakthrough stage started in 1972/73 and it gained momentum in 1975/76 when the agricultural production surpassed around 9 million tons of paddy. It was the very first time in history when the paddy production had achieved such a level. Furthermore, the yield per acre of paddy reached 40 baskets in 1978/79. One of the factors which supported to attain that level of paddy production was the introduction of High Yielding Varieties. This HYVs Program was started since 1970/71. On the other hand, multiple cropping system, which was made possible through irrigation and agricultural mechanization, was carried out either as a pre-monsoon crop before rice such as jute and cotton or a winter crop after rice such as groundnut, sesame, beans and pulses.

Utilization of modern farm inputs increased because the government had urged and persuaded the farmers to use more modern inputs such as chemical fertilizers, and insecticides and pesticides along with the improved seeds since 1962. The level of mechanization had risen since 1962, although not satisfactorily. On the other hand, the Agricultural and Rural Development Corporation (ARDC) played an important role in educating the farmers to use modern technology. The extension service was also expanded, that is, the number of village tract managers who served as field supervisors had increased. Moreover, the price system changed since 1973/74. As a result, the prices of paddy, cotton, jute and sugar-cane increased. As agricultural loans for paddy and other crops such as jute, cotton, sugar-cane and groundnut increased year by year since 1962.

The impact of better use of land, improved technology and improved institutions along with farmers' active participation enabled farmers to raise their productivity and this, in turn, raised the production level. Such a package program was started systematically in 1973/74. Furthermore, from 1973/74 the World Bank, ADB, IMF and other UN Organizations had also supported financial and technical advice.

One of the aims and objectives of the Revolutionary Council is to raise the living standard of the peasants and their wellbeing, on socialist principles, equity. The agrarian reforms reflect the political climate of the country concerned. Successive governments of Myanmar after independence followed almost the same pattern of agrarian reform. However, the Revolutionary Council government carried out agrarian reforms consistently. Myanmar had had a new constitution since 1974 as the same as in the 1948

constitution, ownership of all land was vested to the State. The farmers had "the Right to Cultivate". All land which was tenanted was expropriated defacto in favor of resident tenants since 1965 by the decree of the State. This decree affected some 5 million acres upon which about 1.1 million acres of tenants were working.

The land fragmentation took place all over the years due to the land policies of the successive governments and the law of inheritance. Moreover, it was also estimated that still 60% to 80% of farmers were in debt.

In brief, the agriculture sector had found a great spurt of development in the post Revolutionary Council government. An attributable factor was productivity which in turn was influenced by the government's continuous efforts to introduce improved technology and changes in institutionalization.

However, after 1983 the effects of the "Whole Township Special Production Programme" seemed to reach saturation point as a momentum of growth slowed down. The agricultural sector's growth rate of 6.6% during the period 1973 to 1983 slowed down to 2.1 % in the period 1983-88. The production of paddy declined during 1982/83 to 1987/88. It was mainly due to the decline in yield per acre. The cultivated area under paddy also declined probably because there were no incentives: remained unchanged paddy procurement price of paddy, while prices of other cash crops were very attractive resulting perhaps in some crop substitution.

4.4 Market-Oriented Period (1988-2010)

Before 1988, there were tremendous changes in marketing policy of some agricultural products, especially for decontrolling of prices, and domestic and foreign trade. This liberalization led to increased agricultural production, mainly pulses and beans due to area expansion. Moreover, the Summer Paddy Program, launched in 1992/93 increased the sown acreage and production of paddy since 1993. These changes generated significant development of the agriculture sector in the first half of the 1990s with the price incentives and support of government such as irrigation facilities for summer paddy, subsidies for fertilizers, diesel and so on.

However, this sector still lacked technological advance, farm mechanization and agricultural credits and also constraint in staffing and finance for extension services.

Moreover, as under the Burmese Way to Socialism, the State is the ultimate owner of land and can alter the tenancy whenever the State wants. It is a problem that property rights system for farmers is a yearly-contract tenancy practice. It has the direct influence upon capital investment behavior and land development. There are also difficulties such as to get agricultural loans, improve technology and reap the benefits of economy of scale due to land fragmentation, small farm size and unsecured private ownership of landholding. Moreover, more than 60% of farm households are still working on the farm size of less than 5 acres.

4.4.1 Land Utilization and Farm Size

Since liberalization in domestic and foreign trading in the agriculture sector, sown acreage of agricultural products especially pulses and beans have significantly increased. Moreover, government effort of summer paddy programme was launched in 2003. As a result, cropping area has increased with double and multiple cropping.

As seen in Table 4.20, net sown area increased dramatically to 29 million acres in 2008/09 which was about 18% of total land area. On the other hand, average farm size remains unchanged at about 5 acres. The portion of small scale farmers (holding less than 5 acres) is more than 60% of total farmers.

**Table 4.20 Land Utilization in Myanmar
(2008-2009 Actual)**

	(Million Acres)
Net Sown Area	29.35
Fallow Land	0.63
Culturable Waste Land	14.01
Reserved Forests	41.61
Other Forests	40.57
Other	41.02
Total	167.19

Source: Myanmar Agriculture in Brief 2010.

**Table 4.21 Size Distribution of Agricultural Land
(Percent)**

Size of Land	2002/2003		2008/2009 (actual)	
	Farmers	Area	Farmers	Area
Less than 5 acres	62.6	27.0	63.2	27.9
5-10	24.7	31.3	24.8	30.7
10-20	10.3	26.0	9.5	23.5
20-50	2.3	11.6	2.3	11.6
50 & above	0.1	4.1	0.2	6.3

Source: Review of the Financial, Economic and Social Conditions, 2003/04 and Agricultural Statistics 2010.

4.4.2 Sown Area, Production and Export of Selected Major Crops

During the market-oriented period, sown acreage and production of agricultural products improved dramatically. As shown in Appendix 8 and 9, sown area and production of paddy greatly increased between 1992/93 and 1995/96 due to the summer paddy programme. However, the programme tailed off after 1995/96 due to shortage of key inputs such as fertilizers, diesel or irrigation pumps, reducing subsidies on these inputs, export controls and rising input prices. As a result, production of paddy went slightly downward between 1996/97 and 1998/99, increased again in 1999/2000. Paddy production is affected by changes in sown area rather than in yields. There was tremendous expansion in both sown area and production of pulses except 1997/1998. Since 1999/2000, sown areas and production of most crops increased, but no significant increase in yield for most products, except for sugar-cane. Both sown area and production of sugar-cane significantly increased after 1995/95, but decreased in 2002/03.

In 2003, the government liberalized the agriculture sector, especially for rice. Production of most crops increased since 2004/05, except jute and rubber and the yield slightly increased for all crops, except rubber. During the market-oriented period, the success of the agriculture sector was mainly attributed to area expansion due to the government supports, massive participation in Summer Paddy Program, farmers' response to price incentives and demand for exports.

Growth rate of sown area of paddy was about 3% in average during 1988-2010. Table 4.22 shows the growth rate of sown acreage of selected major crops. Dramatic increase in growth rate of paddy sown area was found during 1992-93 and 1995-96. It was mainly the effect of summer paddy production programme, launched in 1992-93. As other crops, growth rates of sown acreage of maize, pulses, cotton, jute, rubber and sugarcane increased significantly about 4%, 10%, 5%, 11%, 9% and 6% respectively. Again, sown acreage of paddy climbed since 1999-2000 and increased gradually till 2006/07. The government's permission to grant to cultivate large scale farming to private companies might also be the cause of this increase.

Growth rate of production of selected major agricultural products is shown in Table 4.23. Paddy production increased about 4% during 1988 to 2010. The highest growth rate of production was found in pulses with 13% in average during this period. Growth rates of other crops such as cotton, rubber, sesamum, maize, and sugarcane were high. In contrast, growth of jute production was negative.

Because of summer paddy programme, growth rates of paddy production were high during 1992/93 to 1994/95 as there was a high increase in sown area of paddy during the same period. Likewise, yield of paddy increased slightly during this period (Table 4.24). Since 1999/2000, paddy production increased again, except in slight decline in 2002-03. As yield, production of paddy per acre also increased gradually due to utilization of high yield variety seeds, hybrid seeds, fertilizers and other inputs for paddy. On the other hand, encouraging irrigation facilities and providing agricultural credits which were gradually increased also supported to the increase in production of paddy. Moreover, yields of many other crops increased except jute. However, the high yield of most of the crops was not impressive. It reflected that there were still inadequate R&D and extension facilities, insufficient utilization of fertilizers and farm inputs, ineffective irrigation facilities, lack of agricultural credit and farm mechanization.

Table 4.22 Growth Rate of Sown Acreage of Selected Major Crops

Year	Paddy	Wheat	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1988-89	2.4	6.0	-13.7	-7.8	32.7	2.1	2.1	4.2	400.0	-0.5	-7.5
1989-90	2.1	5.4	-3.5	5.7	17.4	1.8	5.5	-14.4	-25.0	-1.6	-8.1
1990/91	1.4	5.1	5.8	-3.9	7.8	-0.8	3.6	1.8	2.2	1.1	4.4
1991/92	-2.3	3.2	-0.6	5.8	29.1	-7.9	-2.7	9.8	-3.3	-1.6	15.3
1992/93	6.3	-2.1	11.3	10.0	18.8	-3.3	6.1	-1.9	53.9	2.7	37.5
1993/94	10.5	-17.4	-3.9	1.4	1.5	-1.3	-5.0	-14.4	-40.1	6.2	-17.6
1994/95	4.4	-12.6	14.6	1.5	15.9	4.0	2.4	41.9	18.3	7.3	-15.6
1995/96	3.6	-15.2	-2.6	6.8	16.8	4.1	-4.1	85.5	27.8	17.7	26.9
1996/97	-4.3	-1.7	-0.2	-1.8	-4.7	-9.1	-10.2	-12.1	-6.5	13.5	23.6
1997/98	-1.5	-3.1	-2.7	8.8	8.4	-6.2	-14.1	-20.0	-19.0	13.3	30.4
1998/99	-0.4	12.4	16.0	-2.6	15.3	11.7	12.7	22.0	6.4	10.8	16.9
1999/00	9.1	6.1	11.6	5.1	8.4	12.8	15.9	4.7	-5.0	13.6	7.1
2000/01	1.2	-23.8	3.5	-0.5	8.3	4.1	4.3	-4.9	16.8	6.4	3.0
2001/02	1.4	-1.0	15.6	-8.2	9.6	-3.6	-3.0	-8.9	12.6	3.1	17.2
2002/03	0.6	5.1	6.9	1.1	2.5	2.2	3.6	2.3	-10.4	-0.7	-8.7
2003/04	0.8	14.1	5.9	-0.5	2.4	12.6	2.7	-3.5	-28.6	2.4	1.6
2004/05	4.8	13.2	3.0	-0.7	4.7	4.5	2.4	4.9	-16.3	7.9	-3.2
2005/06	7.7	4.1	9.5	10.4	7.0	6.8	-10.7	8.5	-16.4	10.5	-8.6
2006/07	10.0	-18.1	1.9	-5.8	6.5	3.4	8.2	6.6	-44.6	30.5	11.8
2007/08	-0.4	7.0	5.7	-14.6	6.3	7.9	4.8	4.0	-54.8	29.1	13.0
2008/09	0.1	1.2	2.8	1.4	1.1	3.6	4.1	-0.2	-35.7	12.4	-2.2
2009/10	-0.3	4.1	2.2	8.2	6.7	2.6	9.5	-2.1	0.0	8.2	-3.4
Compound Rate	2.6	-0.4	4.0	0.9	10.1	2.4	1.7	5.2	10.6	8.7	6.1

Source: CSO, Statistical Yearbook, 1990-2010; Agricultural Statistics 2005-2010.

Table 4.23 Growth Rate of Production of Selected Major Crops

Year	Paddy	Wheat	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1988-89	-3.5	0.0	0.0	0.0	-20.0	-15.6	-14.7	-17.8	11.9	-6.7	-34.8
1989-90	4.9	-4.6	0.5	2.7	22.1	4.8	42.8	5.0	-27.7	7.1	-8.6
1990/91	-0.4	-1.6	-5.2	8.8	21.9	27.0	44.4	-3.2	-29.4	-6.7	59.3
1991/92	-5.5	15.6	2.2	-4.8	30.4	-36.2	-43.8	1.6	-8.3	7.1	-25.2
1992/93	12.4	-3.5	9.0	14.4	-6.1	14.5	39.3	6.5	72.7	6.7	35.0
1993/94	13.0	-21.3	-2.0	5.2	-6.5	-0.2	-6.0	-36.4	-28.9	0.0	-17.1
1994/95	8.6	-17.8	39.3	-14.8	38.8	15.8	35.9	102.4	25.9	68.8	-17.1
1995/96	-1.3	-12.5	-3.6	21.5	50.1	18.5	0.0	91.8	25.3	-7.4	44.2
1996/97	-1.5	10.4	4.1	0.7	-18.7	-5.7	13.4	1.8	-8.5	4.0	24.4
1997/98	-5.8	7.1	7.8	10.8	19.2	-3.5	-14.2	-4.2	-16.4	3.8	27.1
1998/99	2.5	1.1	-1.7	-9.8	1.3	4.1	-28.9	-2.5	0.9	-14.8	5.7
1999/00	17.8	25.0	15.4	12.2	32.8	12.8	40.6	11.6	0.0	13.0	0.4
2000/01	6.0	-20.0	4.4	0.0	23.1	14.9	44.3	-12.7	25.2	34.6	8.2
2001/02	2.8	2.2	46.0	-6.0	18.6	-1.3	-6.4	-7.9	12.1	2.9	20.7
2002/03	-0.5	12.8	13.2	4.5	8.9	5.1	14.5	1.4	-13.4	8.3	-9.7
2003/04	6.1	15.1	16.7	6.1	5.5	16.0	9.8	9.2	-35.8	0.0	7.5
2004/05	7.0	23.0	11.4	2.9	14.3	7.9	7.9	24.7	-33.1	33.3	5.2
2005/06	11.8	4.0	17.3	17.4	13.8	10.0	-7.1	20.3	-15.1	21.2	-1.2
2006/07	11.7	-10.3	12.4	-1.9	12.2	6.3	37.4	14.3	-36.3	14.3	13.7
2007/08	1.7	10.7	11.0	-8.3	12.8	10.5	12.9	14.8	-64.5	20.8	20.4
2008/09	3.6	9.7	5.1	1.1	6.1	6.8	9.4	46.9	-69.7	5.7	0.7
2009/10	0.3	5.3	3.5	10.5	4.3	4.4	1.7	15.5	30.0	19.6	-1.9
Compound Rate	4.2	2.3	9.4	3.3	12.9	5.3	10.6	12.9	-9.1	11.8	7.8

Source: CSO, Statistical Yearbook, 1990-2010; Agricultural Statistics 2005-2010.

Table 4.2.4 Yield of Selected Major Crops

Year	(Baskets/Acre)													
	Paddy 46 lb	Wheat 72 lb	Maize 55 lb	Black gram 72 lb	Green gram 72 lb	Pigeon Pea 72 lb	Groundnut 25 lb	Sesamum 54 lb	Cotton (Viss)	Jute (Viss)	Rubber (lb)	Sugarcane (Ton)		
1988/89	56	13	26	10	6	8	38	5	88	270	330	20		
1989/90	57	12	26	9	6	8	37	4	92	268	329	19		
1990/91	57	11	24	9	7	8	40	4	95	237	329	18		
1991/92	56	12	25	9	8	8	41	4	76	206	332	18		
1992/93	57	12	25	9	8	8	39	4	88	202	335	18		
1993/94	59	12	25	9	8	8	42	4	82	220	340	18		
1994/95	61	10	28	10	9	8	44	6	83	229	470	18		
1995/96	58	11	29	10	9	7	49	7	87	226	471	20		
1996/97	59	12	29	10	9	8	48	7	92	227	505	20		
1997/98	59	13	31	11	10	9	49	6	93	241	505	20		
1998/99	61	12	27	11	9	8	47	6	93	222	432	18		
1999/00	63	14	28	10	8	8	46	6	88	226	453	17		
2000/01	66	14	28	11	9	11	51	7	89	236	513	18		
2001/02	66	15	34	10	9	11	52	7	91	235	522	17		
2002/03	66	16	36	11	10	11	53	8	93	227	526	18		
2003/04	68	16	40	12	10	11	54	8	92	210	492	18		
2004/05	70	17	43	14	11	12	56	9	95	208	512	20		
2005/06	71	17	47	15	12	14	57	10	98	220	530	22		
2006/07	73	19	51	17	13	14	59	11	101	190	531	23		
2007/08	76	20	54	17	14	15	60	11	104	203	571	24		
2008/09	78	22	55	18	14	16	61	12	106	219	577	24		
2009-2010	79	22	56	18	15	16	62	12	106	222	600	25		

Source: CSO, Statistical Yearbook 1993,2000,2004,2010.

Regarding exports, as shown in Table 4.25, rice and rice products fluctuated during this period but it had increased since 2007/08. The high volume of its export was in 1994/95, 2001/02, and 2002/03. Since 2003, government removed the procurement price for paddy and permitted to private sector export of rice. However, value of rice export did not improved significantly. It is shown in Table 4.26. It can be concluded that although market and price liberalization are important institutional development, quality of rice products and secure market are also impressive for the promotion of rice export.

**Table 4.25 Volume of Exports of Selected Major Crops
(Thousand Tons)**

Year	Rice	Pulses	Maize	Cotton	Jute	Rubber
1988-89	47	17	1	0	0	2
1989-90	166	56	14	0	5	2
1990-91	134	195	20	*	0	1
1991-92	183	195	41	0	*	8
1992-93	199	449	44	0	0	18
1993-94	261	514	40	0	0	23
1994-95	1,041	425	70	0	0	24
1995-96	354	610	62	*	5	25
1996/97	93	595	103	*	2	26
1997-98	28	769	50	4	5	22
1998-99	120	622	174	4	0	30
1999-00	55	561	89	2	0	30
2000-01	251	831	148	3	4	20
2001-02	939	1035	90	*	30	25
2002-03	793	1,038	219	*	8	22
2003-04	168	1,211	151	0	8	20
2004-05	182	873	255	0	0	14
2005-06	180	865	90	0	0	29
2006-07	15	1,156	183	0	0	9
2007-08	358	1,141	156	0	0	19
2008-09	666	1,451	120	0	0	14
2009-10	818	1,232	10	0	0	41

* less than 1 thousand ton.

Source: CSO, Statistical Yearbook 1993, 2000, 2004, and 2010; Agriculture in Brief 2011.

Table 4. 26 Values of Exports of Selected major Crops
(Million Kyats)

Year	Rice	Pulses	Maize	Rubber	Cotton	Jute
1988-89	54	53	1	13	0	0
1989-90	266	123	12	8	0	4
1990-91	172	515	13	3	*	0
1991-92	251	429	28	34	0	*
1992-93	249	667	30	71	0	0
1993-94	267	725	28	91	0	0
1994-95	1165	854	49	122	0	0
1995-96	440	1358	46	180	1	6
1996/97	126	1272	107	171	3	5
1997-98	38	1403	45	134	26	8
1998-99	167	1135	116	100	21	0
1999-00	65	1179	54	75	10	0
2000-01	208	1658	92	67	11	5
2001-02	754	1898	59	76	1	37
2002-03	633	1760	139	88	*	10
2003-04	131	1731	93	99	0	0
2004-05	180	1283	165	87	0	0
2005-06	214	1876	64	205	0	0
2006-07	18	3498	156	83	0	0
2007-08	552	3463	169	191	0	0
2008-09	1112	4065	143	122	0	0
2009-10	1391	5063	10	406	0	0

* less than K 1 million.

Source: CSO, Statistical Yearbook 1993, 2000, 2004, 2010; Agriculture in Brief 2011.

On the other hand, export of pulses had dramatically increased since 1990-91. Although it fluctuated during this period, it increased at highest in 2003-04, and decreased in 2004-05 and 2005-06, and then it increased again from 2006-07. Of the value of export income, pulses was the main source of income in export of agricultural products and it had significantly increased since 1995/96. There was a tremendous increase in export income for pulses again since 2006/07 and it reached the highest amount of 5000 million kyat. Other export items such as maize, cotton and rubber were insignificant among agricultural products.

The agrarian reforms reflect the political climate of the country concerned. Successive governments of Myanmar after Independence followed almost the same pattern of agrarian reform.

Larger farmers have improved their lot to some extent since the introduction of a market economic system. They are able to take advantage of liberalization in the agriculture sector. Rural poverty exists in three types of families: marginal farmers with a very small holding of two acres or less; farmers in hill tract areas in which very small farms, the size of one acre or less; and landless laborers. There are still many landless families working as farm laborers, which account for about one third of total farm families. The majority of these people are found under the poverty line.

The agriculture sector is the mainstay in Myanmar economy and the country's economic development can hardly occur apart from the development of agriculture sector. Successive governments tried to develop the sector with policies, planning and institutional changes. In fact, however, those were measures that exploited the agriculture sector and farmers.

During colonial period, although it was denied that private ownership rights and free trade of land policy, credit policy and laissez faire trade policy were main contributors to agricultural development, it did not benefit the farmers. Institutions in that period could not protect farmers. These led to emerge the social class of tenants and landless agricultural laborers and then indebtedness. In other words, one of the results of agricultural development in the colonial era was indebtedness of most of the cultivators, owners, tenants, and agricultural laborers alike. Institutional weaknesses can be seen during the period.

A very extreme land policy was in post independence, the land is owned by the State and land was distributed to poorest farmers on equity basis. It was not implemented successfully. On the other hand, successive governments since independence have used agriculture as a main source to extract surplus through fixing the procurement price of rice well below the world market price. Moreover, production was controlled by quota and production targets.

Even when under the partial liberalization introduced by the SLORC and later by the SPDC government, the compulsory procurement of rice at below the world price

continues. There was also urban bias of the government policy, i.e. keeping constant price of rice, distribution of rice with low prices to government's service personnel while the farmers were buying agricultural inputs such as fertilizers, diesel fuel and other commodities at market prices. In 2003, though the SPDC government liberalized the agriculture sector, there were still constraints in agricultural credits, improvements in technology and utilization of farm implements and problems of land fragmentation and landlessness. These institutional barriers led to the need for agricultural development, and then economic development. Thus, right, secure, and market-proper and supportive institutions are essentially important for the sustainable development of agriculture and living standard of rural population.

Chapter 5

Conclusion

Agriculture plays an important role in Myanmar's overall economic performance. Apart from its substantial contribution to Myanmar's foreign exchange earnings, it also serves as the vehicle for the growth of all other sectors of the nation. It accordingly remains essential to increase agricultural productivity and rural incomes in order to achieve poverty alleviation and rural development.

Agriculture sector employs 66% of the labor force, accounts for about 32% of GDP, and contributes approximately 16% of export earnings. One of the four main economic objectives of Myanmar is "Building of modern industrialized nation through the agricultural development, and all-round development of other sectors of the economy". The agriculture sector not only provides inputs for processing industries, but also a growing market for domestic manufacturers.

Though richly endowed with agricultural resources, the Myanmar's economy exhibited only a slow performance and growth in its agriculture sector. Myanmar still possesses unexploited land and water resources. The Myanmar's agriculture obviously suffered from the excessive government controls and exploitation, and also from improper and ineffective institutions.

Institutions are integral part for the development of agriculture sector, although there are many determinants of agricultural development. Institutions can reduce transaction costs for agricultural marketing; induce technology improvement; and increase productivity. Property rights system can increase investment and secure market and can improve production. In Myanmar, in accordance with the change in political and economic system there is a change in the administrative structure, institutions have also changed.

Land Policy and Property Rights System

Regarding the land policy and property rights system, there was quite difference under colonial period and Myanmar governments. During the colonial period, the British government laid down the secure land policy, private property rights of land, and free trade of land in line with its liberal economic philosophy. As a result, land could be freely

bought and sold, and mortgaged as security for loans and etc.,. It was said that at times, the rights in land in Lower Myanmar changed hands more rapidly than shares in the stock exchanges of the advanced countries.

Farmers who continued in occupation of the same land and paid revenue for twelve successive years were given a title to the land known as a landholder's Right. The implementation of cadastral surveying and land registration system and land revenue collection arrangements led to taxation on land creating the single largest source of state revenue at that time.

After the opening of the Suez Canal in 1869, there was incentive for farmers to increase their productivity and land size, with subsistence agriculture progressing towards commercial agriculture. As a result, agricultural production and exports especially rice increased dramatically before WW II. However, this development gave rise to the need for increased capital to expand production. Farmers were able to obtain their needed capital by borrowing from private money-lenders. Due to the impact of the 1930 Great Depression and other factors, the farmers were not able to payback their loans to money-lenders and most of the agricultural land were passed into the hands of money lenders. Thus, the colonial government's land policy and property rights system led to agricultural development and as the biggest exporter of rice on one hand but on the other hand, this policy forced Myanmar farmers to indebtedness, landless laborers and tenants also due to price control by the foreign marketing companies in part.

During the period between 1931 and 1941, land reform measures were first initiated by the colonial government with the objective of alleviating rural poverty with the formation of combined British and Burma Land Committee. Its goals were to slow down the rate of land alienation to absentee landlords, readjust tenancy laws and redistribute family-sized plots to farming households. Moreover, the British government came to realize the urgent need for financing agriculture with passing the Land Improvement Loans Act 1883 and the Agricultural Loans Act 1884. But, these did not help the farmers much due to domination by foreign interests in the Burmese Legislature.

Because of these bitter experiences under British rule, a major land reform programme was the immediate necessity in Myanmar. The Land Nationalization Programme in Myanmar was officially launched in 1948 when it gained her

independence. This urgency was due to a number of factors both economic and social that had been pressing the Myanmar agriculturists since the days of early 1900s, and the British government did nothing noteworthy to improve the Myanmar farmers.

The chief objective of the Land Nationalization scheme was to create a new economic and social life for the peasants, through systematic distribution of lands and modern method of cultivation coupled with rural development envisaging the formation of agricultural producer's co-operatives for optimum utilization of land and labor. However, this Act could not go into operation at once due to the out break of the insurrections all over the country. It was only in 1953 that another Land Nationalization Act was passed. Again the programme was temporarily suspended in 1959. During 1953-59, out of the total area under cultivation of roughly 18 million acres in the whole country only some 17% of it had been distributed. One obvious reason was lack of security in certain parts of the country due to the insurrections that disturbed almost all parts of the country. Other minor obstacles included lack of good communications, non-availability of land records, maps and sufficient number of forms and registers.

Even in those areas where land had been distributed, the main objectives of the land nationalization programme were only temporarily achieved. Although it aimed to abolish agricultural indebtedness, the agriculturists still were in debt either to the private creditors or to the State.

Myanmar economy during the parliamentary period was still a mono crop economy as in the colonial period. Over 70 % of the foreign exchange earning was from the export of rice. The fluctuation in the world market of rice had serious effects on the finances and stability of the country's economy.

Thus, in spite of the introduction of the land nationalization programme the economic situation of the farmers was no better off. Although it abolished landlordism in the country the squeeze on the cultivator was still there. This was because over 75 % of the population or more than 13 million people in Myanmar were agriculturists cultivating the culturable area of 20 million acres; this meant that the average area cultivated by one agriculturist was only one and a half acres which would produce about 45 baskets of paddy worth some where around kyats 108. Since there was only mono crop a year, the

cultivator was forced to subsidize his deficit budget by borrowing from private money lenders.

It was obvious therefore that in spite of the good intentions for the farmers of the land reform programme, it had many flaws and loopholes with disastrous outcomes. Moreover, the Myanmar inheritance law allowed the equal subdivision of the original holding into small units among the siblings. Thus, the land tended to become fragmented and uneconomic in size. In the sense, it became too small to support an average farm household. Thus because of this ambiguous nature of the Act, the Land Nationalization work was suspended when the Revolutionary Government came into power. But such provisions of the Act that were in line with the Revolutionary Government's agrarian policy, especially the provisions relating to conditions prescribed for exempted and distributed agricultural lands, continued to be operative.

There were no further significant changes in land policy throughout the socialist period. The state was still the ultimate owner of land and farmers had only the land tilling rights. These rights are not allowed to transfer, sell, mortgage, or use as collateral for getting loans. Moreover, the state controlled the cultivation of crops such as planned crops and non-planned crops. Thus farmers did not have the rights to produce what they wanted to.

Although the socialist economic system was abolished and the market-oriented economic system has been introduced since 1988, most of the existing acts, rules and regulations, apart from some progressive amendments made, were not changed in parallel, and thus these are still in use today in accordance with the State Law and Order Restoration Council's Law No.8/88. Cultivable waste land at the disposal of the State is managed by the Central Committee for the Management of Cultivable land, Fallow Land and Waste Land (CCMCL) in accordance with Notification No. 44/91 of the State Law and Order Restoration Council, and Notification No. 1/91 of the CCMCL in 1991.

The Central Committee for the Management of Cultivable land, Fallow Land and Waste Land (CCMCL) was established in 1991 to manage fallow land and agricultural waste land for the purpose of carrying out agricultural production. The Committee can grant the land use rights of up to a total of 50,000 acres for perennial crops, 1,000 acres for seasonal crops. Private Citizens, Co-operatives or State Enterprises are equally

eligible for obtaining cultivation rights on cultivable waste land. Foreign investors are also allowed to apply the permission for investment in agricultural land development and production from the Myanmar Investment Commission (MIC) under the Foreign Investment Law of Myanmar. Duration for right to cultivate/ right to utilize land is 30 years from the year the land use right is granted and can be extended for another 30 years depending upon type of investment.

The rigidity of land tenure under the existing rules and regulations, preventing the cultivators to transfer, sell, lease or mortgage the land use rights has two major adverse impacts on agricultural productivity that need to be addressed in the short and medium term. Firstly, the inability to trade the land use right means that land cannot be operated efficiently. Since transfer of land use rights is difficult, if not impossible, land is allowed to be operated by farmers who lack motivation or access to complementary agricultural inputs. Secondly, ambiguity of land tenure reduces the incentive of farmers to undertake long term investments such as land leveling, soil improvements and irrigation and drainage networks. Evidences from many developing agricultural economies strongly support this link between more secured land tenure and investments in land improvements.

The present land revenue system is based on the old land revenue regulation dated back to the British colonial period, with a series of adjustment, calibrations, or readjustment to the mode of taxation practices. The basic colonial-era system of land records and taxation is still in operation including the land revenue rates, with detailed surveys of land use to coincide with major cultivation seasons. Current land revenue rate for crops ranges from K 0.25 to K 12 per acre and the rate for special crops is from K0.25 to K 22.5 under settlement operation. Thus, it is necessary to review the land tax rates

Many studies including 2003 Agricultural Census have indicated that the size of land holdings are shrinking and land scarcity is increasing despite the existence of about 6.8 million hectares of fallow land and agricultural wasteland in Myanmar. There may be scope for considering a program of land distribution and support for landless farmers as an additional mechanism for expanding and intensifying agricultural productivity. A growing labor force, combined with slow growth in industry and services sectors and with limited off-farm employment expansion will continue to put pressure on the land

base in the near future. It has already resulted in spontaneous expansion of farming into forests or assigned plantation areas leading to conflicts between the local community and respective authorities. Alternatively, government should facilitate area expansion, for both seasonal and plantation crops, by supporting regional land use planning to help guide land conversion to appropriate areas, and technical and financial support for smallholder agriculture development. Recently, the Union Government of Myanmar enacted the Cultivable, Fallow and Waste Land Management Law (Vacant Land Law) and Agricultural Land Law in 2012. According to the acts, land utilization will be extended, and the property rights will protect the farmers from losing their land use rights and also farmers will have the rights to transfer, sell, lease or mortgage their land.

Water Supply and Irrigation

Myanmar has abundant water resource for irrigation development. Water resource and irrigation facilities are important in agriculture-based country like Myanmar. In order to effectively utilize the potential water resources mainly for agricultural purpose and to protect floods, Myanmar has been establishing irrigation facilities to increase agricultural productivity and to reduce the damages. In fact, irrigation facilities had been conducted since Myanmar Kings and irrigation department was established as public works in the colonial period. However, the British government just maintained the existing dams at that time. There were some small dams and tanks since independence in Myanmar and pump irrigation was started in the socialist period. Thus, before 1988, there existed only 138 irrigation facilities with the benefited area of 1.5 million acres. After 1988, during the market-oriented period, total benefited area has increased to 4 million acres with the completion of 233 additional irrigation facilities (up to end of August 2010). And, the storage capacity has also increased. It was due to the efforts of the government and policy objective to increase agricultural production. As a result, cropping area with horizontal and vertical expansion of cultivation and summer paddy cultivation has increased significantly during this period.

Regarding the revenue for the water utilization, Water and Embankment Tax Law was enacted in 1982 and it was no longer adequate due to non-payment by farmers and lack of effective supervision in the collection. Recently, the water tax is charged on per

acre of specific crop and it was no incentive attached that could encourage farmers to save water. Thus, an alternative to this would be to charge water in volumetric basis. On the other hand, the funding of both WRUD and ID is not sufficient and revenue from the water charges is also rarely sufficient to cover the cost of project management. Moreover, efficiency of the system is limited by adequate technical capacity in terms of staff and on-farm irrigation management.

Irrigation water sharing can be improved with closer collaboration and effective communication between WRUD/ID and farmers. Moreover, all the completed dams need to be evaluated by using dam safety technology.

Research and Extension

Research institutions in agriculture sector in Myanmar had developed since colonial period. However, there were such as breeding variety seeds, establishing experiment gardens and agricultural schools. There were no improvement in technology and HYVs. In the parliamentary period, central farms and Agricultural Research Institute were established, but advanced technology and HYVs did not improved. During the socialist period, specifically in 1970s, with the establishment of Rice Research Institute, HYVs seeds were introduced and launched Special High Yield Paddy Project. After that, series of seed projects for paddy and other crops were developed. As a result, yield and HYVs areas increased rapidly during 1970s and 1980s. It was mainly due to the implementation of Training and Visit (T&V) programme for paddy project by the extension services like training, education and demonstration of extension staff at the village and township levels.

However, this Green Revolution effect slowed down in the late 1980s. There were no any other technology development and effective extension services since then. During the market-oriented period, there have been some restructuring R&D department and experiment stations and developed HYVs of rice and other crops, and hybrid variety seeds, but not extensively. The significant improvement was launching Summer Paddy Programme in 1992/93. It was because the lack of adequate research funds for R&D, lack of technically skilled researchers and staffs, lack of crop specialists, inadequate number of extension staff, lack of incentives for researchers, lack of insufficient contact farmers

to use new varieties and lack of incentives for farmers to use them. Moreover, there was also weakness in collaboration between R&D and Extension and Training Institutions.

Recently, the Ministry of Agriculture and Irrigation has implemented and disseminated the new hybrid paddy. It may yield over 200 baskets per acre. If it is effectively conducted, production of this variety of paddy will be increased rapidly.

Farm Implements Related Institutions

Since Myanmar rule, agriculture was subsistent and depended on manual workers and used draught cattle. Even in the colonial period, tremendous expansion in cultivation, Myanmar's agriculture based on traditional methods. Utilization of farm implements started to improve after independence. However, farm mechanization and utilization of farm implements still underdeveloped mainly due to lack of improvement in technology, lack of investment, land fragmentation, soil quality, and land structure. The AMD under the Ministry of Agriculture and Irrigation produced and hired farm implements to farmers, but not substantial amount. Some farmers bought and hired private firms. It still needs to utilize extensively farm implements to increase production.

Credit Institutions

During the colonial period, credit institutions played important roles in expansion of cultivation and production, then agricultural development such as rice production and export. After the opening of the Suez Canal in 1869 and the passing of the Burma Land Act, transformation of commercial cultivation gave incentives to farmers to expand their farming and brought about borrowing money.

Although passing the Land Improvement Loans Act 1883 and the Agriculturist Loans Act 1884 by the government to lend out funds for the expansion of cultivation of farmers, these two acts were not effective and benefited to farmers. Due to limited access to credit by the government, farmers greatly depended upon the private money lenders especially Chettiars. Thus, the Chettiars were the chief providers of capital to Myanmar cultivators throughout the colonial era, with estimate of about two-thirds of Chettiar loans outstanding in 1930, were held by agriculturists. Chettiar lending was secured against collateral, and mostly against title to land.

With the Great Depression, prices of paddy had been trending downwards across the latter half of the 1920s. The impact of the collapse in paddy prices was felt amongst the cultivators, with inability to pay interest payments on their loans, defaulting borrowers and seizing the pledge of collateral. Thus, there was alienation of much of the cultivable land of Lower Myanmar and land owned by Myanmar cultivators passed into the hands of absentee landlords, about a half of all the agricultural lands in Lower Myanmar were transferred to money lenders. It was the cause of agrarian problems in the country.

After gaining independence in 1948, Myanmar inherited from the British rule three major agrarian problems: indebtedness, land alienation and insecurity of tenancy. During the colonial period, because of the lack of a comprehensive system of credit institutions the bulk of agricultural finance was supplied by the private money lending class who imposed extremely high interest rates, providing capital in the absence of a proper banking system for Myanmar agriculturists. When the Anti-Fascist Peoples' Freedom League (AFPFL) government came to power, agricultural loans were issued by the government on its own budget. Then, after the adoption of the Agricultural and Rural Development Five-Year Scheme at the Pyidawtha Conference held in August 1952 the State Agricultural Bank Act of 1953 was passed and established the State Agricultural Bank in 1953.

There were some estimates on the requirements of seasonal loan by the Provincial Banking Enquiry Committee and others based on different assumptions and basis. The need for agricultural credit in post-war years increased for a number of reasons – agricultural production, reconstruction and rehabilitation of agricultural land and building up stocks of implements and plough cattle, etc., .

However, even at the time of the most liberal scale of government finance of agricultural credit, the state loans amounted to only about K 60 million which was about one-sixth of the total requirement. The rest had to be obtained from private sources. This led to the basic issues regarding problems of the policy of state agricultural credit. The government could not continue to carry out a programme of increased state financing of agriculture with the present level of non-repayment of loans. The government had been to insist more and more on collective responsibility system as the main weapon for securing

higher rate of repayment. This had been the basic method with all channels of lending; either through the general administration, or the cooperatives, or the new system of agricultural banks and agency loans. However, the recovery rates were not satisfactory and the system of state credit could not be continued for a long time.

Moreover, the flight of the Chettiar did not solve the problem and in fact this disappearance of Chettiars' credit created a vacuum in the agricultural credit system in Myanmar. The supply of agricultural credit by the government and cooperative societies was not adequate because the cultivators did not have any surplus cash or food except to feed themselves through the crop year. In the 1954 Census the amount of agricultural credit constituted only two-thirds of the costs of cultivation. Then, the government's provision of agricultural credit was to lend out K 700 million in 1963, but farmers could borrow only over K 400 million.

In fact, the amount of agricultural credit made available during the Revolutionary Council government was much more than that of the parliamentary democracy government. It increased not only in the total amount of loans but also credit per acre. On the other hand, its interest rates were lower per annum. However, in 1972, only 1.8 million rural households out of 4.4 million had real access to official credit. Although it somewhat relieved the dependence of the farmers on more expensive private sources of credit, the lending rate of 25 kyat covered only about 11 % of the cost of cultivation in 1972/73.

Since 1965, the government still practiced "collective responsibility system" at village tracts with village banks, village cooperatives and village land committees. Moreover, the government solved the problem of agricultural credit by buying "pindaung" with the cost of cultivating and reaping costs of 45 kyats in 1966 and the Ministry of Industry lent credits for other crops such as cotton, jute and sugarcane.

The consequence was that farmers continued to look to unofficial sources to meet their credit needs. Moreover, since credit was distributed on a per acre basis, farmers with large land holdings benefited from this system. The credit system emphasized equity rather than efficiency, and agricultural loans were granted on the basis of need rather than on the basis of productivity. It was indicated that the government's credit system was not as effective as had been expected.

In April 1973, Myanmar's system of allocating rural credit via the village bank was replaced by a regime in which the bulk of credit available was channeled to cultivators by way of "advance purchase" of their output by the state. From 1973/74 under the BSPP, Trade Corporation No.1 (later AFPTC) took over the functions and the granting of K 35 per acre as part of the advance paddy purchase programme. In 1977/78, the rate was increased to K 70 per acre, which was again raised to K 140 for the HYV areas from 1981/82. Advance purchase relieved cultivators from paying interest on advances, but this did not mean that the credit they receive was free from cost. There had long been a substantial gap between the government's procurement price and the price prevailing in the market. This gap represented the cost to the cultivator of providing their crop to the state and, in this sense, was akin to an interest rate that might be otherwise levied on loans.

Since 1978/79, all agricultural loans have been issued through Myanmar Agricultural Bank. As agricultural credit increased year after year, the credit needs of the farmers also increased. Since institutional credit did not cover the cash part of the cultivation cost, farmers turned to unofficial sources of credit and as a result, farmers' indebtedness was as acute as in previous times. More importantly, the basic concept of priority of equity over efficiency did not change.

The provision of agricultural credit during the market-oriented period is the responsibility of the Myanmar Agricultural and Development Bank (MADB), the state owned bank. The MADB provides seasonal loans, term loans and area development loans. Since 1991/92, new types of loans such as loans for solar salt production, for integrated paddy and fish farming, for mulberry plantation to support sericulture, and so forth, have been introduced as diversification to bring about all-round development of agriculture. Seasonal loans for agriculture currently cover only eight major crops, and not available for other crops. Although lending rates for crops had been raised, they still less than 10% of the actual cost of cultivation. Consequently, farmers with little cash reserves have to resort to informal money lenders at high interest rates.

There are other sources of agricultural credits for farmers such as Rural Saving Mobilization Scheme launched in 1993, Microfinance or Micro credit started in 1997 by UNDP, UNOPS, Grameen Trust, PACT, GRET, World Vision, CARE Myanmar, Save

the Children, GRET. However, agricultural credits are still insufficient. Moreover, Development Companies, established for agricultural development, especially for rice and pulses and beans that are important as staple and exportable crops in 2009, are lending out funds to farmers for the purpose of supporting investment and agricultural inputs at a low interest rate of 2% per month.

Moreover, the MADB raised the agricultural credits from K 20,000 per acre to K.40,000 per acre in 2012. The rate of interest on these loans reduced from 17% to 15% in 2011 September 1, and to 13% in 2012 January1 respectively. These are for the development of agriculture sector by the government's efforts.

For agricultural development and farm income, agricultural credit is a big issue that should receive major attention at present. In fact, the credit crunch is a countrywide problem although its impact varies from region to region, from township to township, and even within a township.

In view of its seriousness, rural credit issue will be accorded top priority in the poverty reduction action programme. In doing so, efforts will be made to build on what has already been achieved and to take due account of on-going activities in this area by the public and private sectors, civil society organizations, and NGOs to avoid duplication and to enhance cooperation among various actors and stakeholders. Microfinance is a way to provide credits for farmers to some extent, not the main option.

However, one important activity that could be undertaken immediately with regard to following up on the rural credit issue is to conduct surveys of farm incomes and expenditures. In an unstable macroeconomic environment, costs and prices are changing all the time but there is a need to get reasonably accurate estimates of farm incomes and expenditures for specific rural communities in order to launch credit programmes for them. Without such information, it will not be possible to determine the amount of credit per acre that will be required and terms and conditions at which it should be provided to ensure these do not impose an undue burden on the borrower, while at the same time prospects of repayment are also reasonably good so that the credit programme can continue on a sustainable basis.

Marketing Institutions

The British government policy was the laissez faire policy and practice free trade policy both in domestic and foreign markets. Moreover, secure foreign market for rice, free market pricing, establishment of foreign marketing companies and improved transportation raised rice export and induced farmers to expand rice cultivation. As a result, the agriculture sector of Myanmar developed to some extent due especially to increase in rice cultivation, production and export. Thus, during the colonial period, Myanmar was the largest exporter of rice although it was lop sided agricultural development, much rely upon mono crop, rice. The benefits from rice export were in the hands of the government and foreign companies. Myanmar farmers did not get these benefits. Foreign trading companies controlled the prices of rice and they got the profits between domestic price and export price.

After gaining independence, the Myanmar government controlled agricultural marketing through the State Marketing Board. These were disincentives for farmers to increase or expand cultivation and production of rice and other crops. During the parliamentary democracy period, although the government's policy was to encourage agriculture sector, the policy hindered the agriculture sector development and exploited to farmers. The marketing and pricing policies did not much changed in the socialist period, but there has been more strictly control on the policies by setting procurement system and compulsory delivery quota system for paddy. Moreover, the government set the planned crops and areas, and forced to farmers what they cultivate and produce. As a result, the sown area and production of agricultural products particularly rice did not much improve during these two periods.

In 1987, the government removed the restrictions on trade for agricultural products except rice and other eight major crops. As a result, cultivation and production of agricultural products especially pulses and beans increased dramatically and also export of pulses and beans was rapidly increased. Again, in 2003 April, the government lifted the procurement system for paddy and liberalized rice export. In 2004, the government also removed the procurement system on industrial crops. Furthermore, the government announced the tax exemption on export of rice, beans and pulses, corn, cotton and rubber in 2011 August. These changes may increase production and export of

these crops and will be the incentives for farmers to expand their cultivation. However, for export promotion, it is needed to secure foreign markets for these products. On the other hand, efficient supply chain mechanism is important to reduce transaction costs and effective and efficient Commodities Exchange Centers need to support it.

Thus, it can be concluded that during the colonial period, a private property right of land was the main supportive factor to agricultural development. The secure private property rights of land was incentive for farmers to expand their cultivation. Development of agricultural production was mainly due to expansion of area of crops, particularly paddy. Land property rights of land and tax exemption for cultivable land led to incentives for expansion of cultivation. However, credit and marketing institutions were not supportive and effective for Myanmar farmers. Thus, these improper and informal credit institutions and exploited and monopolized marketing institutions led Myanmar farmers to become tenants and also indebted and landless.

During the parliamentary democracy period, Land Nationalization Act and redistribution of land to poor farmers caused land fragmentation and inefficient credit for farmers. Formal credit institutions such as SAB could not provide adequate credit. Due to the effects of WW II and insurgency in the country, agricultural production declined and exports as well. Although SMB was established, it was not effective.

During the socialist period, land policy, credit institutions and marketing institutions did not change significantly as during the parliamentary period and did not support agricultural development and farmers. However, R&D and extension services increased agricultural production to some extent only for a specific time period.

During the market-oriented period, liberalization in pricing and marketing, and allowing private sector participation in trade supported agricultural production and exports to some extent.

In the development of the agriculture sector in Myanmar, land policy and property rights system as institutional environment is the most important institution. Property rights of land need to be clear and secure. Private property rights of land was an incentive to expansion of cultivation as an evidence in the colonial period, farmers willing to invest in land investment and cultivation. Moreover, farmers could use and get credit from land as a collateral. Recently, the government enacted the Vacant Land Law and Agricultural

Land Law in 2012. According to the acts, land utilization will be extended, and the property rights will protect the farmers from losing their land use rights and also farmers will have the rights to transfer, sell, lease or mortgage their land. Thus, it is hoped that the secure ownership and ability to exchange, transfer, lease, sell and mortgage will be high investment in land market for entrepreneurs, particularly for poor farmers with turning their latent assets into live capital for the agricultural development.

The second important institution was the marketing institutions. Free pricing and marketing gave opportunity for farmers to choose what to cultivate based on response to market prices. Market prices signaled to farmers what to and how much to produce. Moreover, marketing information system and secure market for exports were also impressive. During the colonial period, there were free market pricing and secure market for rice export. Thus, farmers had incentive to expansion of paddy cultivation and rice export increased dramatically. However, after independence, the successive Myanmar governments controlled domestic pricing for crops especially paddy for the reasons of price stability and urban bias. Moreover, the government monopolized export for foreign exchange earnings for the government. Thus, the procurement system, compulsory delivery system and export restriction retarded agricultural production and disincentives for farmers. As a result, the agriculture sector did not improve. The significant marketing system changes have been conducted during the market-oriented period and it responded to agricultural production particularly pulses and beans, because the government still controlled rice. As a result, production and export of some crops increased significantly.

Credit institution was the third important one. During the study period, formal credit institutions were weak and insufficient. The government banks and other credit institutions did not provide adequate credit for farmers. They provided only about 10% of the total cost of production, particularly paddy. Thus, farmers always relied upon informal credit institutions, private money lenders who charged high rate of interest. It was a burden for farmers. They were in indebted trap except the rich farmers. In fact, credit was important for the use of farm inputs such as fertilizers and utilization of farm implements. Because agricultural production is risk taking and during the processing period, farmers incurred cost of production such as labor costs and other costs.

Availability of adequate credit and formal credit institutions are essential for agricultural development.

According to experiences of Thailand and Vietnam, land reform programmes such as formal land title system, issuance of title deeds and testimonial of land ownership for landowners in Thailand and issuance of land use certificates (LUCs) and assigning land use rights (LURs) in Vietnam allowed the development of land markets that can bring about an efficient allocation of resources and provided the foundation of a formal market for land. These contributed to agricultural development in both countries.

It is evident that Thailand's agricultural growth is affected by its agrarian structure and available land resources. The Thai farmers' ability to adapt to changing market conditions contributed to the country's agricultural success, but even more important was the availability of large areas of virgin land for cultivation. The development of Thai agriculture in the mid-19th century was mainly due to expansion of the agricultural frontier rather than increasing productivity. From the late 1950s, the government sought to finance industrial growth through driving expanded agricultural exports. There are three main factors which have established Thailand's outstanding position as a rice-exporting country: production increase, yield increase and changing farm management of rice cultivation. In conclusion, Thailand's success in agriculture has been achieved primarily through private initiatives, with the state playing a strategic role in setting an investment climate, investing in roads and research, and also supporting agricultural credit to overcome market failures.

Overviewing the institutional changes in Vietnam's agriculture sector, it can be observed that since the 1980s, Vietnam's economic reforms have generated powerful incentives to invest in agriculture. Agricultural production after implementing comprehensive renovation and decollectivization has achieved a high annual growth rate.

In brief, there have been many significant changes in institutions in Myanmar with the changes in political economy. Particularly, in land policy and property rights system, credit institutions, and marketing institutions, their changes affected the agricultural production dramatically. However, there were no significant changes in irrigation facilities, R&D, extension and training, and utilization of farm implements. Thus, institutional changes in the agriculture sector were not effective and supportive to

the agriculture sector development and farmers. It is still needed to change some institutions for the development of the agriculture sector in line with the economic system. For sustainable agricultural development, farmers need to overcome the poverty trap. The role of government is important to create proper institutional environment and establish supportive institutions.

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Appendix 1 Sown Acreage of Selected Major Crops (Thousand Acres)

Year	Paddy	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Rubber
24-25	11,435	190.6	755.6	1034.4	561.9	1042.8	336.6	77.7
25-26	11,559	199.4	700.8	1026.3	498.6	1132.9	449.2	79.4
26-27	11,798	194.0	664.9	1097.5	523.1	1092.9	431.8	85.7
27-28	11,701	193.5	568.0	1348.3	540.1	1071.3	311.1	92.8
28-29	12,057	198.5	491.0	1188.5	598.9	1082.0	302.8	113.7
29-30	12,209	200.1	474.4	1241.5	570.6	1225.0	320.0	120.1
30-31	12,370	195.7	442.7	1340.2	564.5	1322.0	358.5	118.8
31-32	11,866	199.1	626.9	1338.4	407.3	1208.5	213.5	117.6
32-33	12,050	211.7	626.3	1354.7	521.9	1600.0	316.8	110.4
33-34	12,413	190.4	569.3	1212.0	640.2	1609.4	429.5	106.5
34-35	12,010	218.2	597.3	1330.7	624.6	1418.9	442.2	109.4
35-36	11,875	220.9	528.5	1624.2	660.1	1503.7	507.9	107.6
36-37	12,175	190.7	506.7	1567.6	746.6	1427.1	515.6	107.8
37-38	12,490	202.9	520.3	1419.4	895.7	1371.9	559.8	109.5
38-39	12,382	207.7	456.8	1347.7	839.5	1350.2	407.6	107.2
39-40	12,432	222.0	442.5	1467.1	760.5	1427.6	347.4	108.6
40-41	12,519	214.0	450.1	1448.9	780.6	1353.0	418.3	110.6

Source: Economic Research Project, 1959.

Appendix 2 Production of Selected Major Crops (Thousand Tons)

Year	Paddy	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Rubber
24-25	7,485	38.9	65.7	193.6	163.6	56.7	12.5	0.9
25-26	6,828	37.1	46.3	185.7	164.9	40.1	16.6	1.0
26-27	7,540	37.2	79.8	203.0	155.0	30.8	13.7	1.2
27-28	7,008	38.4	67.0	238.6	149.5	45.4	12.1	1.2
28-29	7,122	38.6	83.0	212.9	159.3	38.8	9.1	1.2
29-30	7,279	34.6	50.3	212.1	187.0	50.6	10.7	1.2
30-31	7,491	40.1	49.1	228.2	179.0	71.0	15.5	1.1
31-32	6,088	32.0	87.8	237.9	133.5	27.5	5.6	0.9
32-33	7,171	30.9	62.6	191.1	155.3	64.5	14.1	0.6
33-34	7,545	31.3	63.2	184.0	140.1	69.3	21.7	0.1
34-35	6,575	64.9	80.6	260.0	139.8	49.4	15.3	1.2
35-36	7,306	45.3	62.4	310.3	147.9	45.1	20.3	1.3
36-37	6,877	29.9	41.0	244.1	144.5	36.4	24.2	2.1
37-38	6,729	39.0	61.4	232.8	217.3	48.3	19.3	2.1
38-39	7,924	39.6	62.4	208.7	197.7	53.1	17.2	2.1
39-40	6,878	39.7	47.8	220.7	197.2	50.6	18.6	2.2
40-41	8,036	37.4	61.7	254.3	207.0	55.9	17.2	2.8

Source: Economic Research Project, 1959.

Appendix 3 Sown Area, Yield, Production and Export of Paddy (1912/13-1947/48)

Year	Sown Acre (‘000 Acres)	Yield (Basket / Acre)	Production (‘000 ton)	Export (‘000 ton)
1912-13	10,219	34.32	7,108	2,438
1913-14	10,332	30.90	6,443	2,918
1914-15	10,522	28.40	5,854	2,698
1915-16	10,406	32.65	6,763	2,411
1916-17	10,304	33.16	7,079	2,427
1917-18	10,708	33.60	7,259	1,573
1918-19	10,708	33.60	7,259	2,354
1919-20	10,480	30.24	5,995	2,594
1920-21	10,339	29.65	6,115	2,066
1921-22	10,702	33.24	7,116	2,450
1922-23	10,966	29.27	6,343	2,685
1923-24	11,239	27.73	5,768	2,357
1924-25	11,435	32.46	7,485	2,522
1925-26	11,559	29.31	6,828	3,406
1926-27	11,798	31.48	7,540	2,898
1927-28	11,701	30.13	7,008	3,216
1928-29	12,057	29.37	7,122	2,960
1929-30	12,209	29.66	7,279	2,941
1930-31	12,370	30.06	7,491	3,431
1931-32	11,866	25.74	6,088	3,530
1932-33	12,050	29.50	7,171	3,035
1933-34	12,413	30.68	7,545	3,296
1934-35	12,010	27.00	6,575	3,779
1935-36	11,875	30.26	7,306	3,203
1936-37	12,175	28.30	6,877	3,131
1937-38	12,490	26.59	6,729	3,194
1938-39	12,382	31.46	7,924	2,851
1939-40	12,432	28.55	6,878	na
1940-41	12,519	31.81	8,036	na
1941-42	32,327	30.84	7,721	na
1942-43	10,697	26.30	5,739	na
1943-44	7,636	20.85	3,047	428
1944-45	6,500	19.64	2,540	868
1945-46	6,651	20.41	2,672	1,271
1946-47	7,909	24.66	3,836	1,213
1947-48	9,265	20.06	5,428	1,097

Source: Economic Research Project, 1959.

Appendix 4 Sown Area of Selected Major Crops

(Thousand Acres)

Year	Paddy	Wheat	Millet	Maize	Pulses	Groundnut	Sugarcane	Cotton	Jute	Rubber
1949-50	9,017	41	584	190	249	698	45	213	na	114
1950-51	9,150	43	626	203	249	692	42	217	na	115
1951-52	9,458	48	616	203	240	720	54	247	na	116
1953-53	9,924	43	598	224	261	736	65	286	1	118
1953-54	10,133	45	569	193	267	823	88	299	1.2	118
1954-55	9,821	43	560	179	230	789	59	320	2.1	118
1955-56	10,009	44	559	175	214	830	66	426	5.2	119
1956-57	10,074	49	513	172	246	856	88	397	2.3	121
1957-58	9,849	57	496	178	241	880	91	349	1.7	122
1958-59	10,100	81	498	179	246	972	88	348	15.8	123
1959-60	10,377	75	416	152	303	1,044	67	370	20.8	132
1960-61	10,419	72	404	171	331	1,188	73	371	19.1	140

Source: Economic Survey of Burma 1953, 1954, 1958, and 1962; CSO, Statistical Yearbook, 1960.

Appendix 5 Production of Selected Major Crops

(Thousand Tons)

Year	Paddy	Wheat	Millet	Maize	Pulses	Groundnut	Sugarcane	Jute	Cotton	Rubber
1949-50	4,497	9.2	46.8	n.a	42.4	115	n.a	n.a	17	n.a
1950-51	5,306	9.5	66.5	30	42.5	148	n.a	n.a	18	9.6
1951-52	5,500	10.6	60.4	29	40.5	176	n.a	n.a	20	10.2
1952-53	5,738	10.4	74.6	33	44.6	176	1,059	0.2	22	10.5
1953-54	5,577	9.6	68.4	38	45.0	191	1,138	0.3	22	9.9
1954-55	5,550	8.8	67.2	24	38.2	154	902	0.6	23	13.3
1955-56	5,608	10.1	68.9	26	48.5	204	842	0.5	18	12.3
1956-57	6,169	10.7	70.4	23	49.1	194	1,050	0.9	16	12.5
1957-58	5,218	10.9	59.1	35	38.8	231	1,300	0.4	11	11.7
1958-59	6,476	10.7	58.3	22	41.4	280	1,040	2.8	11	13.5
1959-60	6,771	9.7	58.0	25	46.3	256	1,005	2.9	12	18.5
1960-61	6,743	7.3	55.6	42	35.2	366	1,026	6.3	11	19.5

Source: Economic Survey of Burma 1953, 1954, 1958, and 1962; CSO, Statistical Yearbook, 1960.

Appendix 6 Sown Acreage of Selected Major Crops

(Thousand Acres)

Year	Paddy	Wheat	Maize	Groundnut	Sesamum	Pulses	Cotton	Jute	Rubber	Sugarcane
1962-63	11,953	162	199	1,535	1,575	1,710	550	52	184	117
1963-64	12,474	218	350	1,490	1,610	1,855	674	54	206	97
1964-65	12,623	298	357	1,331	1,960	1,609	615	53	213	120
1965-66	12,390	409	337	1,315	1,998	1,706	567	72	214	143
1966-67	12,328	372	414	1,132	1,910	1,768	487	69	216	155
1967-68	12,193	235	460	1,259	2,050	1,616	526	87	219	146
1968-69	12,402	151	453	1,510	2,037	1,751	389	99	220	162
1969-70	12,243	166	453	1,510	2,258	1,631	362	104	219	101
1970-71	12,400	210	413	1,512	2,061	1,746	437	113	220	233
1971-72	12,300	156	250	1,674	2,292	1,855	554	226	214	273
1972-73	12,014	137	235	1,563	2,256	1,861	532	288	214	292
1973-74	12,575	156	219	1,638	2,660	1,687	527	291	213	235
1974-75	12,793	227	215	1,666	2,619	1,785	542	167	211	211
1975-76	12,858	232	213	1,696	2,464	1,656	514	148	207	247
1976-77	12,547	233	199	1,507	2,630	1,666	402	136	204	251
1977-78	12,690	235	217	1,481	2,696	1,749	405	176	204	261
1978-79	12,957	216	224	1,378	3,087	1,809	461	256	202	266
1979-80	12,420	206	251	1,200	2,563	1,721	480	261	202	236
1980-81	12,668	306	374	1,271	3,231	1,955	546	250	200	248
1981-82	12,610	257	381	1,478	3,385	2,133	560	122	199	273
1982-83	12,064	274	422	1,412	3,402	1,900	537	169	197	287
1983-84	11,938	354	513	1,385	3,308	2,164	562	166	195	276
1984-85	12,151	323	565	1,598	3,708	1,551	619	162	194	301
1985-86	12,114	296	492	1,471	3,489	2,110	532	151	190	165
1986-87	11,968	293	442	1,394	2,845	1,421	471	126	192	151
1987-88	11,531	315	395	1,327	2,933	1,359	425	104	193	133

Sources: Report to the Pyithu Hluttaw on the Financial, Economic and Social Conditions, 1965/66- 1982/83; Review of the Financial, Economic and Social Conditions, 1985/66-1990/91.

Appendix 7 Production of Selected Major Crops

Year	(Thousand Tons)										
	Paddy	Wheat	Maize	Groundnut	Sesame	Pulses	Cotton	Jute	Rubber	Sugarcane	
1962-63	7,543	32	65	425	83	323	54	10	14	14	1,271
1963-64	7,659	51	72	331	52	359	52	11	13	13	1,096
1964-65	8,373	71	53	337	98	278	67	9	3	3	1,067
1965-66	7,927	65	47	283	56	278	45	14	2	2	424
1966-67	6,532	66	53	273	56	219	42	13	11	11	1,557
1967-68	7,647	50	64	365	106	264	48	22	12	12	1,423
1968-69	7,896	21	61	392	82	315	32	21	12	12	1,287
1969-70	7,859	33	47	437	100	269	34	22	13	13	1,291
1970-71	8,330	76	60	414	85	316	43	24	13	13	1,397
1971-72	8,046	26	57	478	111	288	42	65	14	14	1,606
1972-73	7,241	26	55	377	69	246	43	88	15	15	2,000
1973-74	8,466	24	61	405	152	242	37	78	15	15	1,661
1974-75	8,448	63	64	459	94	252	42	39	15	15	1,185
1975-76	9,062	56	60	404	132	234	37	37	14	14	1,615
1976-77	9,172	75	57	416	91	261	31	27	15	15	1,600
1977-78	9,313	92	74	457	109	318	41	55	15	15	1,763
1978-79	10,362	41	76	384	206	326	51	94	15	15	1,812
1979-80	10,283	89	124	337	108	349	49	95	15	15	1,438
1980-81	13,317	117	167	438	157	407	74	99	16	16	2,035
1981-82	14,146	124	206	573	180	515	96	34	16	16	2,736
1982-83	14,372	130	239	550	198	489	99	64	17	17	3,719
1983-84	14,287	214	309	532	207	623	104	55	16	16	3,662
1984-85	14,255	206	303	667	253	484	126	52	16	16	3,767
1985-86	14,091	187	294	551	244	611	98	49	15	15	3,668
1986-87	14,126	192	285	544	199	491	80	47	15	15	3,318
1987-88	13,636	157	224	519	170	464	73	42	15	15	3,368

Sources: Report to the Pyithu Hluttaw on the Financial, Economic and Social Conditions, 1965/66- 1982/83; Review of the Financial, Economic and Social Conditions, 1985/66-1990/91.

Appendix 8 Sown Acreage of Selected Major Crops

(Thousand Acres)

Year	Paddy	Wheat	Maize	Millet	Pulses	Groundnut	Sesamum	Cotton	Jute	Rubber	Sugarcane
1987-88	11,531	315	395	475	1,359	1,327	2,933	425	24	193	133
1988-89	11,807	334	341	438	1,803	1,355	2,994	443	120	192	123
1989-90	12,057	352	329	463	2,116	1,380	3,158	379	90	189	113
1990/91	12,220	370	348	445	2,281	1,369	3,271	386	92	191	118
1991/92	11,935	382	346	471	2,945	1,261	3,184	424	89	188	136
1992/93	12,684	374	385	518	3,500	1,220	3,379	416	137	193	187
1993/94	14,021	309	370	525	3,553	1,204	3,211	356	82	205	154
1994/95	14,643	270	424	533	4,117	1,252	3,288	505	97	220	130
1995/96	15,166	229	413	569	4,808	1,303	3,153	937	124	259	165
1996/97	14,518	225	412	559	4,584	1,184	2,830	824	116	294	204
1997/98	14,294	218	401	608	4,967	1,111	2,430	659	94	333	266
1998/99	14,230	245	465	592	5,729	1,241	2,738	804	100	369	311
1999/00	15,528	260	519	622	6,209	1,400	3,173	842	95	419	333
2000/01	15,713	198	537	619	6,725	1,458	3,308	801	111	446	343
2001/02	15,940	196	621	568	7,372	1,405	3,210	730	125	460	402
2002/03	16,032	206	664	574	7,556	1,436	3,325	747	112	457	367
2003/04	16,168	235	703	571	7,734	1,617	3,414	721	80	468	373
2004/05	16,946	266	724	567	8,099	1,690	3,496	756	67	505	361
2005/06	18,259	277	793	626	8,662	1,805	3,122	820	56	558	330
2006/07	20,076	227	808	590	9,221	1,867	3,378	874	31	728	369
2007/08	19,990	243	854	504	9,801	2,014	3,541	909	14	940	417
2008/09	20,001	246	878	511	9,905	2,086	3,686	907	9	1057	408
2009/10	19,933	256	897	553	10,570	2,141	4,038	888	9	1,144	394

Source: CSO, Statistical Yearbook, 1990-2010; Agricultural Statistics 2005-2010.

Appendix 9 Production of Selected Major Crops

(Thousand Tons)

Year	Paddy	Wheat	Maize	Millet	Pulses	Groundnut	Sesame	Cotton	Jute	Rubber	Sugarcane
1987-88	13,636	130	193	111	464	519	170	73	42	15	3,368
1988-89	13,164	130	193	111	371	438	145	60	47	14	2,197
1989-90	13,803	124	194	114	453	459	207	63	34	15	2,008
1990/91	13,748	122	184	124	552	583	299	61	24	14	3,199
1991/92	12,993	141	188	118	720	372	168	62	22	15	2,392
1992/93	14,603	136	205	135	676	426	234	66	38	16	3,229
1993/94	16,495	107	201	142	632	425	220	42	27	16	2,676
1994/95	17,908	88	280	121	877	492	299	85	34	27	2,218
1995/96	17,670	77	270	147	1,316	583	299	163	43	25	3,199
1996/97	17,397	85	281	148	1,070	550	339	166	39	26	3,979
1997/98	16,391	91	303	164	1,275	531	291	159	33	27	5,056
1998/99	16,808	92	298	148	1,292	553	207	155	33	23	5,344
1999/2000	19,808	115	344	166	1,716	624	291	173	33	26	5,363
2000/01	20,987	92	359	166	2,113	717	420	151	41	35	5,801
2001/02	21,569	94	524	156	2,506	708	393	139	46	36	7,004
2002/03	21,461	106	593	163	2,728	744	450	141	40	39	6,327
2003/04	22,770	122	692	173	2,878	863	494	154	26	39	6,804
2004/05	24,360	150	771	178	3,290	931	533	192	17	52	7,159
2005/06	27,246	156	904	209	3,743	1,024	495	231	15	63	7,073
2006/07	30,435	140	1,016	205	4,198	1,088	680	264	9	72	8,039
2007/08	30,954	155	1,128	188	4,736	1,202	768	303	3	87	9,678
2008/09	32,059	170	1,185	190	5,024	1,284	840	445	1	92	9,744
2009/10	32,166	179	1,226	210	5,240	1,341	854	514	1	110	9,562

Source: CSO, Statistical Yearbook, 1990-2010; Agricultural Statistics 2005-2010.

THE LAND NATIONALIZATION ACT, 1953.

[Act No. 75 of 1953] (As Amended by Act No. 22 of 1954).

It is hereby enacted as follows :—

CHAPTER I.

PRELIMINARY.

1. This Act may be called the Land Nationalization Act, 1953.
Title.
2. It shall apply to the whole of the Union of Burma.
Extent.
3. In this Act, unless there is anything repugnant in the subject or
Definitions. context,—
 - (a) "adult" means a person who has completed the age of eighteen years ;
 - (b) "agricultural land" means culturable waste land at the disposal of the State and land, which is occupied, or is ordinarily utilized, or has been leased, for purposes of agriculture, horticulture or husbandry or for purposes ancillary to agriculture, horticulture or husbandry and includes the land on which the dwelling houses and other structures are situate, but does not include land appropriated to dwelling places of any town or village ;
 - (c) "agriculturist" means a person—
 - (i) who is engaged or has habitually been engaged in the cultivation of land with his own hands as his principal means of subsistence ; or
 - (ii) who superintends personally the actual cultivation of agricultural land throughout the working periods of the year as his principal means of subsistence ;
 - (d) "lease of agricultural land" means a transfer of a right to enjoy such land, made for a certain time, express or implied, or in perpetuity, with or without consideration ;
 - (e) "agriculturist family" means a group of persons related by blood or marriage, living together and depending for its maintenance on the earnings of one senior member thereof, who shall be an agriculturist ;

Explanation.—Families living together but earning and maintaining themselves separately shall be regarded as separate families.

 - (f) "senior member of a family" means any principal member of a family who leads in the family business ;
 - (g) "joint and undivided agriculturist family" means an agriculturist family all members of which have joint possession and common interest in all the agricultural land held by such family in the name of anyone of its members ;
 - (h) "possession" means the right of ownership acquired over an agricultural land by any person, bank, company,

calculated at full flat rate in force during the assessment season 1947-48 ;

- (cc) in respect of agricultural land situate in *Kwins* where soil class or full flat rate specified in clause (a) or (b) has been fixed but where, in the opinion of the President, it is not possible to calculate compensation on the basis of such rate, the land revenue including water-rates but excluding cess last assessed at the ordinary rate prior to the year 1947-48 ;
- (dd) in respect of agricultural land situate in *Kwins* for which fixed demand is made under the Upper Burma Land and Revenue Regulation and the Canal Act, the land revenue including water-rates but excluding cess last assessed at the ordinary rate prior to the year 1947-48 ; and
- (ec) in respect of agricultural land situate in *Kwins* other than those specified in clause (aa), (bb), (cc) or (dd), the land revenue including water-rates but excluding cess last assessed at the ordinary rate prior to the year 1947-48.

(ii) in areas where the Land and Revenue is in force :

- (aa) in respect of agricultural land situate in *Kwins* for which soil class rate is fixed under the Land and Revenue Act, the land revenue including water-rates but excluding cess calculated at full soil class rate in force during the assessment season 1947-48 ;
- (bb) in respect of agricultural land situate in *Kwins* for which flat rate is fixed under the Land and Revenue Act, the land revenue including water-rates but excluding cess calculated at full flat rate in force during the assessment season 1947-48 ;
- (cc) in respect of agricultural land situate in *Kwins* where soil class rate or full flat rate specified in clause (a) or (b) has been fixed, but where, in the opinion of the President, it is not possible to calculate compensation on the basis of such rate, the land revenue including water-rates but excluding cess last assessed at the ordinary rate prior to the year 1947-48 ; and
- (dd) in respect of agricultural land situate in *Kwins* other than those specified in clause (a), (b) or (c), the land revenue including water-rates but excluding cess, last assessed at the ordinary rate prior to the year 1947-48

Explanation.—“ Land Revenue excluding cess last assessed at the ordinary rate ” does not include fallow rate and reduced rate.

CHAPTER II.

PROHIBITION OF TRANSFER AND RESUMPTION OF AGRICULTURAL LAND.

4. No agricultural land shall, as from the commencement of this Act, be mortgaged, sold or otherwise transferred or divided except in accordance with the provisions of this Act and of the rules made thereunder.

Prohibition of
Transfer.

(iv) that of its members the majority shall be citizens of the Union :

Provided that, in order to obtain an exemption in addition to that ordinarily granted, such family shall have more than four adult members and such members shall work the agricultural land possessed by the senior member of such family :

Provided further that an adult member of such agriculturist family shall be deemed to have been in continuous possession of agricultural land from the 4th January, 1948, if he inherits such agricultural land from the senior member, who was in possession of the same on the 4th January, 1948.

(c) A minor who satisfies the following conditions :—

- (i) that he shall be bereft of either parent ;
- (ii) that he shall be a member of an agriculturist family specified in clause (a) ;
- (iii) that he shall have inherited such agricultural land after the 4th January, 1948, from a senior member of such agriculturist family who was in possession of the same on the 4th January, 1948 ;
- (iv) that he shall still be under guardianship ; and
- (v) that he shall be a citizen of the Union.

(d) A person of unsound mind who satisfies the following conditions :—

- (i) that he shall be a member of an agriculturist family specified in clause (a) ;
- (ii) that he shall be in possession of such agricultural land ;
- (iii) that he shall still be under guardianship and shall have been declared to be of unsound mind by a competent Court ; and
- (iv) that he shall be a citizen of the Union.

(e) A senior member of a non-agriculturist family who satisfies the following conditions :—

- (i) that he shall have been in continuous possession of such agricultural land since the 4th January, 1948, or shall have inherited such agricultural land after the 4th January, 1948, from a person who was in possession of the same on the 4th January, 1948 ;
- (ii) that he shall reside permanently in the village-tract or ward where such land is situate ;
- (iii) that he shall give an undertaking in writing to the effect that he would work such agricultural land in such manner and within such time as prescribed in clause (c) of section 3 ; and
- (iv) that he shall be a citizen of the Union.

Provided that the President or the authorities appointed by him in this behalf may relax the condition specified in sub-clause (ii), if the President or the authorities consider that the permanent residence of the senior member of such family outside the village-tract or ward in which such land is situate, will not be a cause for the breach of condition specified in sub-clause (iii).

order, as prescribed in Schedule I, if he satisfies the following conditions :—

- (a) that he shall be in possession of such agricultural land ;
- (b) that such land shall have been transferred as gift to him before the 22nd June, 1953, such transfer having been entered in the registers of the Land Records Department before such date ; if such agricultural land is situate in any of the constituent States, the Special Chin Division, or *Kwins* in respect of which no land records are kept there shall be sufficient evidence to satisfy the President of the Union that such lands have been donated to such member before the 22nd June, 1953 ;
- (c) that the income derived from such land shall be utilised exclusively for religious purposes ; and
- (d) that he shall be a citizen of the Union.

(4) Exemption from resumption under section 5 shall be granted in respect of any class of agricultural land specified in items 5, 6 or 7 of Schedule I, to such extent of area as prescribed therefor in the said Schedule.

CHAPTER IV.

DISTRIBUTION OF AGRICULTURAL LANDS.

7. (1) Subject to the provisions of section 8, the agricultural land resumed by the State under section 5, excepting such as may be required by the State, shall be distributed in such order of priority as may be prescribed by rules made under this Act to the following agriculturist families to such extent of area specified as follows :—

- (a) to the extent of *tadontun* to each agriculturist family, which is not entitled to exemption under section 6, and if such family has more than four adult members as agriculturists up to one quarter of the *tadontun* in addition to the original *tadontun* for every such member in excess of the four ;
- (b) up to the extent of such area as will make up *tadontun* to which an agriculturist family is entitled under this section, if the area of agricultural land, to which such agriculturist family is entitled to exemption under section 6, is less than *tadontun*.

(2) Notwithstanding anything contained in sub-section (1), the President or the authorities appointed by him in this behalf may, if necessary, direct that any agricultural land referred to in sub-section (1) or any waste land available for cultivation at the disposal of the State shall be distributed in accordance with rules made under this Act to such agriculturist organizations as may be formed under section 13.

(3) Notwithstanding anything contained in sub-sections (1) and (2), if the President for any reason which he deems to be sufficient, is unable to distribute the agricultural land resumed, he may dispose of such land in such manner as he thinks fit.

10. (1) Unless there is anything repugnant to the rights of the State and the provisions of section 12, any senior member of an agriculturist family who is in possession of agricultural land distributed under section 7 or section 52 shall enjoy the following rights over such agricultural land:—

- Rights over distributed agricultural land.
- (a) the right to occupy and work such land and enjoy all benefits arising therefrom ;
 - (b) the right to sell or gift such land to any agriculturist organization, of which and senior member of such family is a member ; and
 - (c) the right to divide such land or exchange it for any other agricultural land.

Provided that the rights specified in clauses (b) and (c) shall be enjoyed only in consistence with the rules made under this Act and with the sanction of the President or of such authorities as the President may appoint in this behalf.

(2) Unless there is anything repugnant to the rights of the State and other provisions of this Act, any agricultural land which has been distributed under section 7 or section 52 shall be heritable.

Provided that any agricultural land devolving as share of inheritance on any person who is a non-agriculturist and who fails to give an undertaking in writing that he would work such land within the time fixed and in the manner prescribed in clause (c) of section 3, shall be resumed by the President.

CHAPTER VI.

CONDITIONS IN RESPECT OF AGRICULTURAL LAND EXEMPTED OR DISTRIBUTED UNDER THIS ACT.

11. (1) Where any senior member of an agriculturist family is in possession of any agricultural land in respect of which an exemption has been granted under section 6, he shall, in respect of such agricultural land, comply with the following conditions:—

Conditions in respect of agricultural land exempted.

- (a) that he shall not mortgage, sell or otherwise transfer such agricultural land to any other person except in accordance with the provisions of section 9 and the rules made under this Act ;
- (b) that he shall not divide or exchange such agricultural land except in accordance with the provisions of section 9 and the rules made under this Act ;
- (c) that he shall work such land in the manner prescribed in clause (c) of section 3 ;
- (d) that he shall pay all revenues of the State in respect of such land ;
- (e) that the family, of which he is a member, shall not cease to be an agriculturist family ;
- (f) that he shall not leave such land fallow without sufficient cause ; and
- (g) that he shall not rent or lease out such land.

Provided that the President may, as circumstances permit exempt any member of a religious order from the operation of any of the conditions contained in this sub-section.

(6) Where Trustees of a religious institution are in possession of agricultural land exempted under section 6, they shall, in respect of such agricultural land, comply with the following conditions :—

- (a) that they shall not mortgage, sell, or otherwise transfer such land except in accordance with the provisions of section 9 and the rules made under this Act ;
- (b) that they shall not divide or exchange such agricultural land except in accordance with the provisions of section 9 and the rules made under this Act ;
- (c) that they shall pay all revenues of the State in respect of such land ;
- (d) that they shall not leave such agricultural land fallow without sufficient cause ; and
- (e) that they shall utilize the income derived from such land exclusively for religious purposes.

Provided that the President may, as circumstances permit, exempt such Trustees of a religious institution from the operation of any of the conditions contained in this sub-section.

12. (1) Where any senior member of an agriculturist family is in possession of any agricultural land distributed under section 7 or section 52, he shall, in respect of such agricultural land, comply with the following conditions :—

Conditions in respect of agricultural land distributed.

- (a) that he shall not mortgage, sell, or otherwise transfer such agricultural land except in accordance with the provisions of section 10 and the rules made under this Act ;
- (b) that he shall not divide or exchange such agricultural land except in accordance with the provisions of section 10 and the rules made under this Act ;
- (c) that he shall work such agricultural land in the manner prescribed in clause (c) of section 3 ;
- (d) that the family, of which he is a member, shall not cease to be an agriculturist family ;
- (e) that he shall pay all revenues of the State in respect of such land ;
- (f) that he shall not leave such agricultural land fallow without sufficient cause ;
- (g) that he shall not rent or lease out such agricultural land ; and
- (h) that he shall join such agricultural organizations as may be formed from time to time under the provisions of this Act and the rules made thereunder.

(2) Where any adult member, minor or person of unsound mind, of an agriculturist family is in possession of agricultural land which has been distributed under section 7 or section 52, such adult member or any guardian of such minor or person of unsound mind shall, in respect of such land, comply with the following conditions :—

- (a) that he shall not mortgage, sell or otherwise transfer such agricultural land except in accordance with the provisions of section 10 and the rules made under this Act ;

16. The President may appoint Village or Ward Land Committees, by election or otherwise, in such areas as he may deem necessary and may invest such committees with all or any of the following powers for carrying out the purposes of this Act--
- Village or Ward Land Committee
- (a) the power to grant exemption under section 6 ;
 - (b) the power to distribute agricultural lands under section 7 ;
 - (c) the power to form agricultural organizations under section 13 ; and
 - (d) such other powers as the President may by rules prescribe.

CHAPTER IX.

COUNCILS.

17. (1) The President may, for the purpose of promoting rural economy, constitute the following Councils consisting of representatives of agriculturist organizations and such experts as the President may deem necessary :—
- Councils.
- (a) The Union Council of Land and Rural Development ;
 - (b) The Divisional Councils of Land and Rural Development ;
 - and
 - (c) The District Councils of Land and Rural Development.
- (2) The President may make rules for the constitution of such Councils :

Provided that the President may also appoint other organizations and may by rule prescribe powers of such organizations for the promotion of rural economy.

18. The President may invest the Union Council of Land and Rural Development with all or any of the following powers :—
- Powers of Union Council of Rural Development.
- (a) the power to draw up plans for the formation of Divisional and District Councils of Land and Rural Development and of agriculturist organizations ;
 - (b) the power to draw up plans relating to the functions of such councils and agriculturist organizations ;
 - (c) the power to co-ordinate the functions of such councils and of agriculturist organizations ;
 - (d) the power to give general instructions to such councils and agriculturist organizations ; and
 - (e) such other powers as the President may by rules prescribe.

19. The President may invest the Divisional Councils of Land and Rural Development with all or any of the following powers :—
- Powers of Divisional Councils of Land and Rural Development.
- (a) the power to co-ordinate the functions of District Councils of Land and Rural Development and of agriculturist organizations ;
 - (b) the power to give general instructions to such councils and agriculturist organizations ; and
 - (c) such other powers as the President may by rules prescribe.

25 Every person, authority or member of the Committee, Council or Executive Committee appointed under this Act shall be deemed to be a public servant within the meaning of section 21 of the Penal Code.

CHAPTER XII.

REMOVAL, SUSPENSION AND SUPERSESSION.

26. If any member of a Committee, Council or Executive Committee appointed under this Act persistently makes default in the discharge of his duties or exceeds or abuses his powers, the President may direct an enquiry to be made in accordance with the rules under this Act, and after such enquiry, remove him or, for such time as he may deem fit, place him under suspension or withdraw from him all or certain of his powers.

27. If a Committee, Council or Executive Committee appointed under this Act persistently makes default in the discharge of its duties, or exceeds or abuses its powers, the President may direct an enquiry to be made in accordance with the rules made under this Act and, after such enquiry, supersede it or, for such time as he may deem fit, place it under suspension or withdraw from it all or certain of its powers.

28. The President may, in ordering the supersession, suspension or withdrawal of powers, of a Committee or Council or Executive Committee appointed under this Act, direct in accordance with the rules made thereunder, that the functions of that Committee, Council or Executive Committee or the powers so withdrawn shall be performed or exercised by such authority as the President may think fit and may also appoint an advisory Committee to advise such authority.

CHAPTER XIII.

RESUMPTION OF EXEMPTED AND DISTRIEUTED AGRICULTURAL LAND ON BREACH OF CONDITIONS.

29. (1) Whoever being legally bound to comply with the conditions prescribed in section 11, fails so to comply with any of the conditions other than those prescribed in sub-section (1) in clauses (b), (d) and (f) of sub-section (5) and in sub-section (6), the authorities appointed by the President in this behalf shall, after making enquiry in accordance with the rules made under this Act, resume the agricultural land in possession of such person, in respect of which such breach of condition has been committed, without any compensation being paid therefor.

(2) Whoever being legally bound by the provisions of section 4, contravenes any of such provisions, the authorities appointed by the President in this behalf shall, after making an enquiry in accordance with the rules made under this Act, resume the agricultural land, in possession of such person, in respect of which such contravention has been committed, without any compensation being paid therefor.

by the Committees, Authorities, appointed and by the Councils and Executive Committees constituted under this Act ;

(b) Prescribing period of limitation in appeal, review and revision ; and

(c) Such other matters as may be deemed necessary.

35. The President may, at any time if he deems necessary, confirm, revise or annul any order or Judgment made under the provisions of this Act and of the rules made thereunder.

CHAPTER XV.

BAR TO JURISDICTION OF CIVIL COURT AND OTHER AUTHORITIES.

36. Notwithstanding anything contained in any other law for the time being in force, no Civil Court shall have jurisdiction in any matter under this Act, except in the matters of dispute as to who is entitled to compensation and of appointing a guardian.

37. No agricultural land shall be liable to attachment or sale under any order or decree made by a Civil Court or under any order passed under any other law for the time being in force.

CHAPTER XVI.

UTILIZATION OF AGRICULTURAL LAND.

38. (1) If it is deemed to be beneficial to the State or to the agriculturists by cultivating any particular crop in any particular area or by utilizing agricultural land in the prescribed manner in any particular area the President may take, or cause to be taken such measures as he deems expedient for the cultivation of such particular crop or for the utilization of agricultural land in such particular manner.

(2) The President may make rules for carrying out the purposes of sub-section (1).

39. Notwithstanding anything contained in any other provisions of this Act, the President or the authorities appointed by him in this behalf may direct, if it is deemed necessary, that any agricultural land be utilized in such manner as prescribed by him.

40. (1) Notwithstanding anything contained in any other law for the time being in force and in the provisions of this Act, the President may dispose of the alluvial islands, village communal land and culturable waste land at the disposal of the State in accordance with the rules made under this Act.

(2) The grazing grounds and village communal lands shall be preserved, unless otherwise directed by the President or by the authorities appointed by him in this behalf.

deem fit and shall have the power vested in a Civil Court under the Code of Civil Procedure in respect of the following matters:—

- (a) discovery and inspection ;
- (b) enforcing the attendance of witnesses and requiring the deposit of witness fees ;
- (c) compelling the production of documents ;
- (d) examining witnesses on oath ;
- (e) fixing dates ;
- (f) receiving sworn written statements ;
- (g) examining by Commission witnesses who are unable to attend ; and
- (h) inspecting places and scenes .

45. (1) The President may appoint Compensation Officers to receive Compensation Officers, and examine applications for compensation and determine compensation in accordance with section 42 and the provisions of Schedule II and may invest them with such powers as he may deem necessary.

(2) The President may by rule prescribe the procedure to be followed in receiving and examining applications for compensation and in calculating and determining compensation under this Act.

CHAPTER XIX.

PUNISHMENTS.

46. Whoever contravenes the provisions of section 4 shall be punished with fine which may extend to five hundred kyats.
Punishment for Transfer of agricultural land.

47. Whoever obstructs any committee, authority, council or Executive Committee appointed or constituted under this Act or a member of such committee, council or Executive Committee in the course of performance of its or his duties, shall be punished with imprisonment for a term which may extend to two years or with fine which may extend to one thousand kyats or with both.
Punishment for obstruction.

48. Whoever disobeys any order or direction issued under this Act by any committee, authority, council or Executive Committee appointed or constituted under this Act shall be punished with imprisonment for a term which may extend to six months or with fine which may extend to two hundred kyats or with both.
Punishment for disobedience of orders.

49. If five or more persons band together with the common intention of committing an offence under section 47 or 48, and if any of them in furtherance of such common intention, commits an offence under section 47 or 48, every one of them shall be punished with imprisonment for a term which may extend to three years.
Punishment for offences committed by five or more persons.

54. Measures taken under the Land Nationalization Act, 1948, in Syrian Township shall be deemed to be of no effect on the date of the commencement of this Act.

Cancellation of measures taken in Syrian Township.

SCHEDULE I.

1. In the case of agricultural lands classified as Rice Main Kinds in the Settlement Records, or Rice Lands in the records of the Land Records Department, or where no such records are maintained, as ordinarily utilized for paddy cultivation :—

- (a) up to fifty acres, if such land be in possession of an agriculturist family which satisfies the conditions specified in clause (a) of sub-section (1) of section 6 ;
- (b) up to fifty acres, if such land be in possession of a joint and undivided agriculturist family which satisfies the conditions specified in sub-clauses (i), (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 6 ; and if there be more than four adult members in such a family and if such family satisfies the conditions specified in the first proviso to clause (b) of sub-section (1) of section 6, up to 12.50 acres for every such adult member as exceeds four ;
- (c) up to ten acres, if such land be in possession of a minor who satisfies the conditions specified in clause (c) of sub-section (1) of section 6 ;
- (d) up to ten acres, if such land be in possession of a person of unsound mind who satisfies the conditions specified in clause (d) of sub-section (1) of section 6 ; and
- (e) up to twenty acres, if such land be in possession of a non-agriculturist family which satisfies the conditions specified in clause (e) of sub-section (1) of section 6 ;
- (f) up to twenty acres, if such land be in possession of an agriculturist family which satisfies the conditions specified in clause (f) of sub-section (1) of section 6.

Provided that if the claim for exemption under clause (c) be for more than one minor of the same agriculturist family, the total area of agricultural land to be exempted shall not exceed fifty acres.

2. In the case of agricultural lands classified as *Ya* Main Kinds including Chillie land marked (S) in Kyauksè District, in the Settlement Records or as *Ya* and Chillie land in the records of the Land Records Department, or where no such records are maintained, as ordinarily utilized for the cultivation of *Ya* crops :—

- (a) up to twenty-five acres, if such land be in possession of an agriculturist family which satisfies the conditions specified in clause (a) of sub-section (1) of section 6 ;
- (b) up to twenty-five acres, if such land be in possession of a joint and undivided agriculturist family which satisfies the conditions specified in sub-clauses (i), (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 6 ; and if there be more than four adult members in such a family and if such family satisfies the conditions specified in the first

4. In the case of agricultural lands classified as sugar-cane Main Kinds in the Settlement Records, or as sugar-cane land in the records of the Land Records Department, or where no such records are maintained, as ordinarily utilized for the cultivation of sugar-cane —

- (a) up to ten acres, if such land be in possession of an agriculturist family which satisfies the conditions specified in clause (a) of sub-section (1) of section 6 ;
- (b) up to ten acres, if such land be in possession of a joint and undivided agriculturist family which satisfies the conditions specified in sub-clauses (i), (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 6 ; and if there be more than four adult members in such family and if such family satisfies the conditions specified in the first proviso to clause (b) of sub-section (1) of section 6 ; up to 2' 50 acres for every such member as exceeds four ;
- (c) up to five acres, if such land be in possession of minor who satisfies the conditions specified in clause (c) of sub-section (1) of section 6 ;
- (d) up to five acres, if such land be in possession of person of unsound mind who satisfies the conditions specified in clause (d) of sub-section (1) of section 6 ; and
- (e) up to five acres, if such land be in possession of non-agriculturist family which satisfies the conditions specified in clause (e) of sub-section (1) of section 6 ;
- (f) up to five acres, if such land be in possession of an agriculturist family which satisfies the conditions specified in clause (f) of sub-section (1) of section 6 :

Provided that if the claim for exemption under clause (c) be for more than one minor of the same agriculturist family, the total area of agricultural land to be exempted shall not exceed ten acres.

5. All *Dhani* lands classified as *Dhani* Main Kind in the Settlement Records, or as *Dhani* Lands in records of the Land Records Department, or where no such records are maintained, as ordinarily utilize 1 for the cultivation of *Dhani*.

6. All Garden lands, classified as *Garden* Main Kinds, including (K.G.) *Kaing* Garden in Pakôkku District and (B.V.) *Betel Vines* in Henzada District in the Settlement Records, or as Garden lands in the records of the Land Records Department, or where no such records are maintained, as ordinarily utilized for the cultivation of garden crops.

7. All lands, classified as *Rubber* Main Kind, including (R.R.) *Rubber Grants* in the Settlement Records, or the lands classified in the records of the Land Records Department as cultivated with *Rubber*, or where no such records are maintained, as ordinarily utilized for the cultivation of *Rubber*.

8. All agricultural lands in possession of a religious institution or of a member of the religious order.

SCHEDULE II—contd.

Description of Land	Extent of compensation
<p>3. Agricultural land over which rights have accrued under section 7 of the Land and Revenue Act and which is situate in the areas where the aforesaid Act is in force.</p>	<p>(h) For the next 100 acres, five times the land revenue.</p> <p>(i) For the next 100 acres, four times the land revenue.</p> <p>(j) For the next 100 acres, three times the land revenue.</p> <p>(k) For the next 100 acres, twice the land revenue.</p> <p>(l) For the remaining number of acres, compensation equal to land revenue.</p> <p>3. Of the agricultural land transferred before the 22nd June, 1953, if such transfer had been registered or entered in the records of the Land Records Department concerned before that date, and over which rights of possession had been acquired by any person, bank, company, institution, firm or joint and undivided Hindu family, and liable to be resumed by the State under this Act :—</p> <p>(a) For the first 100 acres, twelve times the land revenue.</p> <p>(b) For the next 100 acres, eleven times the land revenue.</p> <p>(c) For the next 100 acres, ten times the land revenue.</p> <p>(d) For the next 100 acres, nine times the land revenue.</p> <p>(e) For the next 100 acres, eight times the land revenue.</p>

Appendix 11 Notification of Tax Exemption

Seven export items granted tax exemption

NAY PYI TAW, 15 Aug—The *Government of the Republic of the Union of Myanmar* today issued Notification No (32/2011) dated 11 August 2011.

The translation of the notification is as follows:-

Republic of the Union of Myanmar

Union Government

Notification No. 32/2011

Nay Pyi Taw

12th Waxing of Wagaung 1373 ME

(11 August 2011)

1. Exercising Section 8 (d) of Trade Law, the Union Government hereby grants tax exemption from export of the following goods as a token of its encouragement to boosting export.
 - (a) rice
 - (b) beans and pulse
 - (c) corn
 - (d) sesame
 - (e) rubber
 - (f) freshwater, saltwater products
 - (g) animal products (except prohibited ones)

2. This notification shall be in effect for a period of six months from 15 August 2011 to 14 February 2012.

By Order/

Tin Myo Kyi
Secretary
Union Government

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေး ဥပဒေ

(၂၀၁၂ ခုနှစ်၊ ပြည်ထောင်စုလွှတ်တော်ဥပဒေအမှတ် ၁၀၊)
၁၃၇၃ ခုနှစ်၊ တန်ခူးလဆန်း ၈ ရက်
(၂၀၁၂ ခုနှစ်၊ မတ်လ ၃၀ ရက်)

ပြည်ထောင်စုလွှတ်တော်သည် ဤဥပဒေကို ပြဋ္ဌာန်းလိုက်သည်။

အခန်း(၁)

အမည်နှင့်အဓိပ္ပာယ်ဖော်ပြချက်

- ၁။ ဤဥပဒေကို မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းများ စီမံခန့်ခွဲရေးဥပဒေဟုခေါ်တွင်စေရမည်။
- ၂။ ဤဥပဒေတွင်ပါရှိသော အောက်ပါစကားရပ်များသည် ဖော်ပြပါအတိုင်း အဓိပ္ပာယ်သက်ရောက်စေရမည် -
 - (က) ဗဟိုကော်မတီ ဆိုသည်မှာ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေး ဗဟိုကော်မတီကို ဆိုသည်။
 - (ခ) ဝန်ကြီးဌာန ဆိုသည်မှာ ပြည်ထောင်စုအစိုးရ လယ်ယာစိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာနကို ဆိုသည်။
 - (ဂ) ဦးစီးဌာန ဆိုသည်မှာ ကြေးတိုင်နှင့် မြေစာရင်းဦးစီးဌာနကိုဆိုသည်။
 - (ဃ) လုပ်ငန်းအဖွဲ့ ဆိုသည်မှာ ဤဥပဒေအရ ဖွဲ့စည်းသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေး လုပ်ငန်း အထောက်အကူပြုအဖွဲ့ကို ဆိုသည်။
 - (င) မြေလွတ်၊ မြေလပ် ဆိုသည်မှာ ယခင်က သီးစားခံယူလုပ်ကိုင် လာခဲ့ပြီး အကြောင်းအမျိုးမျိုးကြောင့် စွန့်လွှတ်ထားသည့် သီးစားခံယူ လုပ်ကိုင်သူမရှိသော စိုက်ပျိုးရေး သို့မဟုတ် မွေးမြူရေးလုပ်ငန်း လုပ်ကိုင်နိုင်သည့်မြေနှင့် နိုင်ငံတော်က သီးသန့်လျာထားသတ်မှတ်သည့် မြေများကို ဆိုသည်။
 - (စ) မြေရိုင်း ဆိုသည်မှာ သစ်ပင်၊ ဝါးပင် သို့မဟုတ် ချုံနွယ်များ ပေါက်ရောက်လျက်ရှိသည်ဖြစ်စေ၊ မရှိသည် ဖြစ်စေ၊ ပထဝီမြေအနေအထားအရ မြေမျက်နှာပြင် ညီညာမှုရှိသည်ဖြစ်စေ၊ မရှိသည်ဖြစ်စေ တစ်ကြိမ် တစ်ခါမျှ စိုက်ပျိုးလုပ်ကိုင်ခဲ့ခြင်းမရှိသော မြေသစ်ဖြစ်သည့် မြေရိုင်းနှင့် တောရိုင်းမြေများကို ဆိုသည်။ ယင်းစကားရပ်တွင် စိုက်ပျိုးရေးလုပ်ငန်း၊ မွေးမြူရေးလုပ်ငန်း၊ ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်း၊ အစိုးရ က ခွင့်ပြုထားသော ဥပဒေနှင့်ညီညွတ်သည့် အခြားလုပ်ငန်းများ လုပ်ကိုင်ရန်အလို့ငှာ တရားဝင် ပယ်ဖျက်ပြီးဖြစ်သည့် ကြိုးစိုင်းသစ်တောမြေ၊ စားကျက်မြေနှင့် အင်းအိုင်မြေများလည်း ပါဝင်သည်။
 - (ဆ) အာမခံကြေး ဆိုသည်မှာ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရသူက လုပ်ကိုင်မည့်၊ အသုံးပြုမည့် လုပ်ငန်းအလိုက် သတ်မှတ်ထားသော ကြိုတင်ကြေးငွေတစ်ရပ်ကို ပြည်ထောင်စုအစိုးရက အသိအမှတ်ပြုထားသော ဘဏ်တစ်ခုခုသို့ အပ်နှံရန် သို့မဟုတ် အာမခံချက်ပေးရန် ဤဥပဒေများနှင့် အညီ သတ်မှတ်သော အာမခံကြေးငွေကိုဆိုသည်။
 - (ဇ) မြေခွန် ဆိုသည်မှာ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရသူက လုပ်ကိုင်သည့်၊ အသုံးပြုမည့်လုပ်ငန်းအလိုက် နိုင်ငံတော်သို့ ပေးဆောင်ရန် နှုန်းထားသတ်မှတ်ချက်ကို ဤဥပဒေအရ ပြုလုပ်သော နည်းဥပဒေပါ မြေခွန်ကိုဆိုသည်။
 - (ဈ) နှစ်ရှည်ပင် ဆိုသည်မှာ တစ်ဆက်တစ်စပ်တည်း စိုက်ပျိုးထားပြီး အပင်အမျိုးအစားအလိုက် နှစ်ကာလ တစ်ခုတွင် အကျိုးအမြတ်ရရှိနိုင်မည့် သီးပင်၊ သစ်ပင်များကို ဆိုသည်။
 - (ည) ဥယျာဉ်ကြံသီးနှံ ဆိုသည်မှာ တစ်ဆက်တစ်စပ်တည်းသော်လည်းကောင်း၊ ရောနှော၍သော်လည်း ကောင်း စိုက်ပျိုးထားပြီး အကြိမ်ကြိမ်ခူးဆွတ်သော်လည်း အပင်သက်တမ်းကုန်သည်အထိ ပြန်လည် စိုက်ပျိုးရန် မလိုသည့် သစ်သီးဝလံပင်များကိုဆိုသည်။

- (င) ရာသီသီးနှံ ဆိုသည်မှာ စိုက်ပျိုးချိန်ရာသီကာလအတွင်း စိုက်ပျိုးရိတ်သိမ်း၍ ဝင်ငွေရရှိပြီးနောက် ထပ်မံ မြေပြုပြင် စိုက်ပျိုးရသည့် သီးနှံကိုဆိုသည်။
- (ဌ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်း ဆိုသည်မှာ မြန်မာ့သတ္တုတွင်း ဥပဒေ ပုဒ်မ ၂၊ ပုဒ်မခွဲ (ည)တွင် အဓိပ္ပာယ်ဖွင့်ဆိုထားသော ဓာတ်သတ္တုထုတ်လုပ်ခြင်း ဆောင်ရွက်သည့်လုပ်ငန်းကို ဆိုသည်။
- (ည) ခွင့်ပြုမိန့် ဆိုသည်မှာ ဤဥပဒေနှင့်အညီ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် လျှောက်ထားခြင်းနှင့် စပ်လျဉ်း၍ ဗဟိုကော်မတီက လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ပြုသည့် အမိန့်ကို ဆိုသည်။

အခန်း(၂)

မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းများ စီမံခန့်ခွဲရေး ဗဟိုကော်မတီဖွဲ့စည်းခြင်း

၃။ နိုင်ငံတော်သမ္မတသည် -

- (က) နိုင်ငံတော် စီးပွားဖွံ့ဖြိုးတိုးတက်ရေးအတွက် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို အသုံးပြု၍ စီးပွားဖြစ်စိုက်ပျိုးရေး၊ မွေးမြူရေး၊ ဓာတ်သတ္တုထုတ်လုပ်ခြင်း၊ အစိုးရက ခွင့်ပြုထားသော ဥပဒေနှင့် ညီညွတ်သည့် အခြားလုပ်ငန်းများကို ထိရောက်မှန်ကန်စွာ အသုံးပြု စီမံဆောင်ရွက်နိုင်ရန် လယ်ယာ စိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန ပြည်ထောင်စုဝန်ကြီးက ဥက္ကဋ္ဌအဖြစ်လည်းကောင်း၊ ကြေးတိုင် နှင့် မြေစာရင်းဦးစီးဌာန ညွှန်ကြားရေးမှူးချုပ်က အတွင်းရေးမှူးအဖြစ်လည်းကောင်း၊ သက်ဆိုင်ရာ အစိုးရဌာနအဖွဲ့အစည်းများမှသင့်လျော်သည့် ပုဂ္ဂိုလ်များနှင့် အခြားသင့်လျော်သောပုဂ္ဂိုလ်များက အဖွဲ့ဝင်များအဖြစ်လည်းကောင်း ပါဝင်သောမြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေး ဗဟို ကော်မတီကိုဖွဲ့စည်းရမည်။
- (ခ) ပုဒ်မခွဲ(က)အရ ဖွဲ့စည်းထားသော ဗဟိုကော်မတီကို လိုအပ်သလို ပြင်ဆင်ဖွဲ့စည်းနိုင်သည်။

အခန်း(၃)

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်

၄။ ဗဟိုကော်မတီသည် နိုင်ငံတော်အတွင်းရှိ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို အောက်ဖော်ပြပါလုပ်ငန်းများ အတွက် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ပြုနိုင်သည် -

- (က) စိုက်ပျိုးရေးလုပ်ငန်း၊
- (ခ) မွေးမြူရေးလုပ်ငန်း၊
- (ဂ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်း၊
- (ဃ) အစိုးရက ခွင့်ပြုထားသော ဥပဒေနှင့်ညီညွတ်သည့် အခြားလုပ်ငန်းများ။

၅။ နိုင်ငံတော်အတွင်းရှိ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို ပုဒ်မ ၄ ပါ လုပ်ငန်းများအတွက် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိလိုပါက အောက်ပါပုဂ္ဂိုလ်နှင့် အဖွဲ့အစည်းများသည် သတ်မှတ်ချက်များနှင့်အညီ ဗဟိုကော်မတီသို့ လျှောက်ထားနိုင်သည် -

- (က) မြန်မာနိုင်ငံသားရင်းနှီးမြှုပ်နှံသူများ၊
- (ခ) အစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်းနှင့် အစိုးရမဟုတ်သော အဖွဲ့အစည်းများ၊
- (ဂ) ၁၉၈၇ ခုနှစ်၊ မေလ ၂၆ ရက်နေ့မှစ၍ နိုင်ငံသား ပစ္စည်းလွှဲပြောင်းခြင်းကို ကန့်သတ်သည့် ဥပဒေပုဒ်မ ၁၄နှင့်အညီ ကင်းလွတ်ခွင့်ပြုထားသူများ၊
- (ဃ) အစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်း တစ်ရပ်ရပ်နှင့် အကျိုးတူ ကိစ္စရပ်များအတွက်ဆောင်ရွက်မည့် နိုင်ငံ ခြားရင်းနှီးမြှုပ်နှံမှုဥပဒေအရ ခွင့်ပြုထားသော ရင်းနှီးမြှုပ်နှံသူများ။

(င) မြန်မာနိုင်ငံသား ရင်းနှီးမြှုပ်နှံသူများနှင့် အကျိုးတူကိစ္စရပ်များအတွက် ဆောင်ရွက်မည့် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု ဥပဒေအရ ခွင့်ပြုထားသော ရင်းနှီးမြှုပ်နှံသူများ။

- ၆။ ဗဟိုကော်မတီသည် ပုဒ်မ ၅ အရ လျှောက်ထားသည့် ကိစ္စများနှင့်စပ်လျဉ်း၍-
 - (က) သက်ဆိုင်ရာတိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်အစိုးရအဖွဲ့၏ သဘောထားမှတ်ချက်ကို ရယူရမည်။
 - (ခ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်းအတွက်ဖြစ်ပါက သတ္တုတွင်းဝန်ကြီးဌာနမှ လည်းကောင်း၊ ပုဒ်မ ၄၊ ပုဒ်မခွဲ (ဃ)ပါ အခြားလုပ်ငန်းအတွက်ဖြစ်ပါက သက်ဆိုင်ရာဝန်ကြီးဌာနမှလည်းကောင်း သဘောထား တောင်းခံရမည်။
 - (ဂ) ကြီးပိုင်းတောနှင့် ကြီးပြင်ကာကွယ်တောများဖြစ်သည့် သစ်တောနယ်မြေများကို ထိခိုက်ပျက်စီးမှု မရှိစေရေးနှင့် သဘာဝနယ်မြေများ၊ ရေဝေရေလဲဒေသများ၊ သဘာဝအင်းအိုင်များကို ထိန်းသိမ်းနိုင်ရေးတို့အတွက် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနှင့် သစ်တောရေးရာဝန်ကြီးဌာန၊ သက်ဆိုင်ရာ အခြားဝန်ကြီးဌာနများနှင့် ညှိနှိုင်းဆောင်ရွက်ရမည်။
 - (ဃ) နိုင်ငံတော်၏ မြေအသုံးချရေးမူဝါဒ ပီပြင်စွာဖော်ထုတ်နိုင်ရေးအတွက် လိုအပ်သောအကြံပေးမှုများကို ပြည်ထောင်စုအစိုးရအဖွဲ့သို့ တင်ပြရမည်။

၇။ ဗဟိုကော်မတီသည် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှုပြုလုပ်ရန် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်လျှောက်ထားသည့် လုပ်ငန်းများကို မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်၏ သဘောတူညီချက်ဖြင့် ခွင့်ပြုနိုင်သည်။

၈။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းများတွင် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်လျှောက်ထားသည့် လုပ်ငန်းများကို ထိရောက်မှန်ကန်စွာ အသုံးချ စီမံဆောင်ရွက်နိုင်ရန် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ပေးခြင်း သို့မဟုတ် ယင်းသို့ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ပေးရန် ငြင်းပယ်ခြင်းပြုနိုင်သည်။

၉။ ဗဟိုကော်မတီသည် ပုဒ်မ ၈ အရ မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းများလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ပေးခြင်းပြုသည့် အခါ အာမခံကြေးပေးသွင်းစေပြီး ခွင့်ပြုမိန့် ထုတ်ပေးရမည်။

အခန်း(၄)

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်နှင့်စပ်လျဉ်း၍ သတ်မှတ်ချက်များ

၁၀။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို စိုက်ပျိုးရေး၊ မွေးမြူရေးနှင့် ယင်းနှင့် ဆက်နွယ်လျက်ရှိသော စီးပွားရေးလုပ်ငန်းများအတွက် ခွင့်ပြုသည့်အခါ မြေဧရိယာနှင့် စပ်လျဉ်း၍-

- (က) စိုက်ပျိုးရေးလုပ်ငန်းတွင်-
 - (၁) နှစ်ရှည်ပင်ဖြစ်ပါက တစ်ကြိမ်လျှင် ဧက ၅၀၀၀ ထက် မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။ ခွင့်ပြုထားပြီးသည့် ဧက၏ ၇၅ ရာခိုင်နှုန်းကို အပြည့်အဝ လုပ်ကိုင်ဆောင်ရွက်ပြီးဖြစ်ပါက ထပ်မံ၍ တစ်ကြိမ်လျှင် ဧက ၅၀၀၀ ထက်မပိုစေဘဲ စုစုပေါင်းဧက ၅၀၀၀၀ အထိ အကြိမ်ကြိမ်ခွင့်ပြုနိုင်သည်။ နိုင်ငံတော် အကျိုးအလို့ငှာ ခွင့်ပြုသင့်သောလုပ်ငန်းဖြစ်ပါက ပြည်ထောင်စုအစိုးရအဖွဲ့၏ သဘောတူညီချက်ဖြင့် တစ်ကြိမ်တည်းတွင် ဧက ၅၀၀၀ ထက်ပို၍ အမှန်တကယ်စိုက်ပျိုးနိုင်မည့် ဧကအား ခွင့်ပြုနိုင်သည်။
 - (၂) ဥယျာဉ်ခြံသီးနှံဖြစ်ပါက ဧက ၃၀၀၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။
 - (၃) စက်မှုကုန်ကြမ်း ရာသီသီးနှံဖြစ်ပါက တစ်ကြိမ်လျှင် ဧက ၅၀၀၀ ထက် မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။ ခွင့်ပြုထားသည့်ဧကကို ၇၅ ရာခိုင်နှုန်း အပြည့်အဝ လုပ်ကိုင် ဆောင်ရွက်ပြီးဖြစ်ပါက ထပ်မံ၍ တစ်ကြိမ်လျှင် ဧက ၅၀၀၀ ထက်မပိုစေဘဲ စုစုပေါင်းဧက ၅၀၀၀၀ အထိ အကြိမ်ကြိမ်ခွင့်ပြုနိုင်သည်။

နိုင်ငံတော်အကျိုးအလို့ငှာ ခွင့်ပြုသင့်သောလုပ်ငန်းဖြစ်ပါက ပြည်ထောင်စုအစိုးရအဖွဲ့၏ သဘောတူညီချက်ဖြင့် တစ်ကြိမ်တည်းတွင် ဧက ၅၀၀၀ ထက်ပို၍ ခွင့်ပြုနိုင်သည်။

(၄) ကျေးလက်ဒေသ တောင်သူလယ်သမားများနှင့် မိသားစု တစ်နိုင်တစ်ပိုင် စိုက်ပျိုးရေး လုပ်ကိုင်လိုသူများအတွက် ၅၀ ဧက ထက်မပိုသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းကို သက်ဆိုင်ရာဒေသအဖွဲ့အစည်း တစ်ခုခုက ခွင့်ပြုနိုင်ရေးအတွက် စီမံဆောင်ရွက်နိုင်သည်။

(ခ) မွေးမြူရေးလုပ်ငန်းတွင်-

(၁) ငါး၊ ပုစွန်၊ ကကန်း မွေးမြူရေးဖြစ်လျှင် ဧက ၁၀၀၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(၂) တိရစ္ဆာန်မွေးမြူရေးဖြစ်လျှင်-

(ကက) ကျွဲ၊ နွား၊ မြင်း မွေးမြူရေးဖြစ်ပါက ဧက ၂၀၀၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(ခခ) သိုး၊ ဆိတ် မွေးမြူရေးဖြစ်ပါက ဧက ၅၀၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(ဂဂ) ကြက်၊ ဝက်၊ ဘဲ၊ ငှက် မွေးမြူရေးဖြစ်ပါက ဧက ၃၀၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(၃) ပုဒ်မခွဲငယ် (၁) နှင့် (၂) တို့တွင် အကျုံးမဝင်သော မွေးမြူရေးလုပ်ငန်းဖြစ်ပါက သင့်လျော်သော ဧကကို ခွင့်ပြုနိုင်သည်။

(ဂ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်းတွင် ပြည်ထောင်စုအစိုးရ၊ သတ္တုတွင်းဝန်ကြီးဌာနနှင့် ညှိနှိုင်းခွင့်ပြုနိုင်သည်။

(ဃ) အစိုးရကခွင့်ပြုထားသော ဥပဒေနှင့်ညီညွတ်သည့် အခြားလုပ်ငန်းများတွင် ပြည်ထောင်စုအစိုးရ၊ သက်ဆိုင်ရာဝန်ကြီးဌာနနှင့် ညှိနှိုင်းခွင့်ပြုနိုင်သည်။

၁၁။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို စိုက်ပျိုးရေး၊ မွေးမြူရေးနှင့် ယင်းတို့နှင့် ဆက်နွယ်လျက်ရှိသော စီးပွားရေးလုပ်ငန်းများအတွက် ခွင့်ပြုသည့်အခါ အချိန်ကာလနှင့်စပ်လျဉ်း၍ -

(က) စိုက်ပျိုးရေးလုပ်ငန်းတွင်-

(၁) နှစ်ရှည်ပင်နှင့် ဥယျာဉ်ခြံသီးနှံဖြစ်လျှင် စတင်ခွင့်ပြု သည့်နှစ်မှစ၍ နှစ်ပေါင်း ၃၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(၂) ရာသီသီးနှံဖြစ်လျှင် သတ်မှတ်သော စည်းကမ်းချက်များကို ဖောက်ဖျက်ခြင်းမရှိသရွေ့ ခွင့်ပြုရမည်။

(ခ) မွေးမြူရေးလုပ်ငန်းတွင် စတင်ခွင့်ပြုသည့်နှစ်မှစ၍ နှစ်ပေါင်း ၃၀ ထက်မပိုစေဘဲ ခွင့်ပြုနိုင်သည်။

(ဂ) ပုဒ်မခွဲ (က) ပုဒ်မခွဲငယ် (၁) နှင့် ပုဒ်မခွဲ (ခ) တို့အရ ခွင့်ပြုထားသော သက်တမ်းကုန်ဆုံးပြီးနောက် ဆက်လက်ဆောင်ရွက်လိုသော လုပ်ငန်းအတွက် လုပ်ငန်းအမျိုးအစားပေါ်မူတည်ပြီး ထပ်မံ၍ စုစုပေါင်း နှစ်ပေါင်း ၃၀ ထက်မပိုစေဘဲ အကြိမ်ကြိမ်ခွင့်ပြုနိုင်သည်။

(ဃ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်းလုပ်ငန်းတွင် ပြည်ထောင်စုအစိုးရ၊ သတ္တုတွင်းဝန်ကြီးဌာနနှင့် ညှိနှိုင်းခွင့်ပြုနိုင်သည်။

(င) အစိုးရကခွင့်ပြုထားသော ဥပဒေနှင့်ညီညွတ်သည့် အခြားလုပ်ငန်းများတွင် ပြည်ထောင်စုအစိုးရ၊ သက်ဆိုင်ရာဝန်ကြီးဌာနနှင့် ညှိနှိုင်းခွင့်ပြုနိုင်သည်။

၁၂။ ဗဟိုကော်မတီသည် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှုဥပဒေအရ ခွင့်ပြုထားသောရင်းနှီးမြှုပ်နှံသူများ သို့မဟုတ် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှု ဥပဒေအရ ခွင့်ပြုထားသော ရင်းနှီးမြှုပ်နှံသူများပါဝင်သည့် အဖွဲ့အစည်းက မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်လျှောက်ထားလာပါက နိုင်ငံသားများ ဆောင်ရွက်နိုင်စွမ်းမရှိသော လုပ်ငန်းများသာ ရင်းနှီးမြှုပ်နှံလုပ်ကိုင်နိုင်ရန် စိစစ်ခွင့်ပြုရမည်။

အခန်း (၅)
အာမခံကြေးနှင့် မြေခွန်

၁၃။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက လုပ်ငန်းအမျိုးအစားအလိုက် ပေးသွင်းရမည့် အာမခံ ကြေးနှုန်းထားကို သတ်မှတ်ရမည်။

၁၄။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်အတွက် ကောက်ခံမည့် မြေခွန်နှုန်းထားနှင့် သင့်တင့်သောမြေခွန်ကင်းလွတ်ခွင့်ပြုသည့်ကာလကို လုပ်ငန်းအမျိုးအစား၊ သီးနှံအမျိုးအစားအလိုက် သတ်မှတ်ရမည်။

၁၅။ ဦးစီးဌာနသည်-

- (က) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူထံမှ မြေခွန်ကို လုပ်ငန်းအမျိုးအစား၊ သီးနှံအမျိုးအစားအလိုက် မြေခွန်ကင်းလွတ်ခွင့် ကာလကုန်ဆုံးသည့်နေ့မှစ၍ စည်းကြပ်ခြင်းနှင့် ကောက်ခံခြင်းပြုရမည်။
- (ခ) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ရရှိသူ၏ မြေခွန်ပေးသွင်းခြင်းကို ကြီးကြပ်စစ်ဆေးရမည်။

အခန်း(၆)

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက လိုက်နာရမည့် စည်းကမ်းချက်များ

၁၆။ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူသည် -

- (က) ခွင့်ပြုထားသည့် လုပ်ငန်းအမျိုးအစားနှင့် ယင်းနှင့် ဆက်နွယ်လျက်ရှိသော စီးပွားရေးလုပ်ငန်းကိုသာ လုပ်ကိုင်ရမည်။
- (ခ) လုပ်ပိုင်ခွင့်ရမြေကို စတင်ခွင့်ပြုသည့်နေ့မှစ၍ လေးနှစ်အတွင်း သတ်မှတ်ချက်အတိုင်း လုပ်ငန်းပြီးစီးသည်အထိ ဖော်ထုတ်လုပ်ကိုင်ရမည်။ သဘာဝဘေးအန္တရာယ်ကြောင့်သော်လည်းကောင်း၊ တည်ငြိမ်အေးချမ်းမှုမရှိသော အခြေအနေကြောင့်သော်လည်းကောင်း ကုန်လွန်သွားသည့် အချိန်အတွက် သတ်မှတ်ကာလကို ဗဟိုကော်မတီမှ ပြန်လည်ပြင်ဆင်သတ်မှတ်ပေးနိုင်သည်။
- (ဂ) ခွင့်ပြုထားသည့် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ခွင့်ပြုချက်မရရှိဘဲ ပေါင်နှံခြင်း၊ ပေးကမ်းခြင်း၊ ရောင်းချခြင်း၊ အငှားချထားခြင်း၊ အခြားနည်း ဖြင့် လွှဲပြောင်းခြင်း သို့မဟုတ် ခွဲစိတ်ခြင်းမပြုရ။
- (ဃ) မိမိလုပ်ကိုင်ခွင့်ရရှိသည့် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများအတွက် မြေခွန်ကို အပြေအကျေ ပေးဆောင်ရမည်။
- (င) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်နှင့်စပ်လျဉ်း၍ ဗဟိုကော်မတီက သတ်မှတ်ထားသောစည်းကမ်းချက်များကို လိုက်နာရမည်။
- (စ) ခွင့်ပြုချက်ရယူထားသော လုပ်ငန်းမှအပ မြေပေါ်မြေအောက်ရှိ အခြားသယံဇာတပစ္စည်းများကို ထုတ်ယူခြင်းမပြုရ။
- (ဆ) ခွင့်ပြုထားသောမြေအတွင်း သယံဇာတပစ္စည်းများတွေ့ရှိ၍ နိုင်ငံတော်အစိုးရက စီးပွားဖြစ်ထုတ်လုပ်လိုသဖြင့် ခွင့်ပြုထား သော မြေဧရိယာအနက် လိုအပ်မည့်မြေဧရိယာကို ပြန်လည်သိမ်းယူသည့်အခါ ပြည်ထောင်စုအစိုးရက ညွှန်ကြားထားသည့်အတိုင်း ပြန်လည်အပ်နှံရမည်။

**အခန်း(၇)
ကြီးကြပ်ခြင်း**

၁၇။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်နှင့်စပ်လျဉ်း၍ တင်ပြလာသည့် ကိစ္စရပ်များအတွက် စိစစ်သုံးသပ်ခြင်းနှင့် ညှိနှိုင်းဆောင်ရွက်ခြင်းများကို လုပ်ကိုင်နိုင်ရန် တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်အသီးသီးတွင် လုပ်ငန်းအဖွဲ့များနှင့် သီးခြားအဖွဲ့များကို ဖွဲ့စည်း၍ လုပ်ငန်းတာဝန်များအား သတ်မှတ်ပေးရမည်။

၁၈။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက သတ်မှတ်ထားသည့် စည်းကမ်းချက်များနှင့်အညီ လုပ်ငန်းများ ဆောင်ရွက်ခြင်း ရှိ မရှိကို စစ်ဆေးရန် သက်ဆိုင်ရာဌာနများ စုပေါင်းပါဝင်သော အထူးအဖွဲ့ကို အခါအားလျော်စွာ ဖွဲ့စည်းတာဝန်ပေးအပ်နိုင်သည်။

၁၉။ ဗဟိုကော်မတီသည် အောက်ပါအခြေအနေ တစ်ရပ်ရပ်ပေါ်ပေါက်ပါက ခွင့်ပြုထားသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများအနက်မှ လိုအပ်မည့် အနည်းဆုံးမြေဧရိယာကို ပြန်လည်ရယူပိုင်ခွင့်ရှိသည်-

- (က) ခွင့်ပြုထားသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများတွင် ရှေးဟောင်းယဉ်ကျေးမှုအမွေအနှစ်များ တွေ့ရှိခြင်း၊
- (ခ) နိုင်ငံတော်အကျိုးငှာ အခြေခံအဆောက်အအုံ စီမံကိန်းလုပ်ငန်း သို့မဟုတ် အထူးစီမံကိန်းလုပ်ငန်း ဆောင်ရွက်ရန်လိုအပ်ခြင်း၊
- (ဂ) ဓာတ်သတ္တုထုတ်လုပ်ခြင်း လုပ်ငန်းလုပ်ကိုင်ရန် ခွင့်ပြုထားသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများတွင် ခွင့်ပြုထားသောသတ္တုအမျိုးအစားမှအပ အခြားသယံဇာတပစ္စည်းတွေ့ရှိခြင်း၊
- (ဃ) ပုဒ်မ ၄၊ ပုဒ်မခွဲ (က)၊ (ခ)နှင့် (ဃ)တို့ပါ လုပ်ငန်းလုပ်ကိုင်ရန် ခွင့်ပြုထားသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများတွင် သယံဇာတပစ္စည်းတွေ့ရှိခြင်း။

၂၀။ ဗဟိုကော်မတီသည် ခွင့်ပြုထားသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို ပုဒ်မ ၁၉ အရ ပြန်လည်ရယူခြင်းအတွက် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက အမှန်တကယ် ရင်းနှီးမြှုပ်နှံထားသည့် ကုန်ကျစရိတ်ငွေများကို ပြည်ထောင်စုအစိုးရအဖွဲ့၏ သဘောတူညီချက်ဖြင့် ကာလတန်ဖိုးတွက်ချက်၍ သင့်လျော်သည့် သတ်မှတ်ကာလအတွင်း လျော်ကြေးရရှိစေရန် သက်ဆိုင်ရာဌာန၊ အဖွဲ့အစည်းများနှင့် ညှိနှိုင်းဆောင်ရွက်ပေးရမည်။

၂၁။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက ဤဥပဒေပါ စည်းကမ်းချက် တစ်ရပ်ရပ်ကို ချိုးဖောက်ကြောင်း တွေ့ရှိလျှင် မူလပေးသွင်းထားသော အာမခံကြေးကို နိုင်ငံတော်ဘဏ္ဍာငွေအဖြစ် သိမ်းဆည်းမည့်အပြင် လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ကိုလည်း ပြန်လည်ရုပ်သိမ်းပိုင်ခွင့်ရှိသည်။

၂၂။ ဤဥပဒေ မပြဋ္ဌာန်းမီ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေးဗဟိုအဖွဲ့၏ ခွင့်ပြုမိန့်အရ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိထားသော ပုဂ္ဂိုလ်နှင့် အဖွဲ့အစည်းများသည် -

- (က) ခွင့်ပြုမိန့်ရရှိထားသော မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းဧရိယာ၊ ခွင့်ပြုမိန့်ထုတ်ပြန်သည့် ရက်စွဲနှင့် စာအမှတ်တို့ကို ပြည့်စုံစွာဖော်ပြပြီး အမှန်တကယ် ဖော်ထုတ်လုပ်ကိုင် အသုံးပြုပြီးသောဧရိယာနှင့် ကျန်ရှိနေသော ဧရိယာတို့ကို အထောက်အထား ခိုင်လုံစွာဖြင့် ဓာတ်ပုံမှတ်တမ်းများ ပူးတွဲလျက် မှတ်တမ်းပြုစုပြီး ဗဟိုကော်မတီသို့ တင်ပြရမည်။
- (ခ) ဖော်ထုတ်လုပ်ကိုင် အသုံးပြုပြီးဖြစ်သော မြေလွတ်၊ မြေလပ်၊ မြေရိုင်းများနှင့် စပ်လျဉ်း၍ ဤဥပဒေနှင့်အညီ လိုက်နာဆောင်ရွက်ရမည်။
- (ဂ) မူလခွင့်ပြုကာလထက် ကျော်လွန်သည်အထိ ဖော်ထုတ်လုပ်ကိုင်အသုံးပြုခြင်း မရှိသေးသော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများကို နိုင်ငံတော်က ပြန်လည်သိမ်းယူပြီး ဖြစ်သည်ဟု မှတ်ယူရမည်။

(ဃ) မူလခွင့်ပြုကာလအတွင်း သတ်မှတ်ထားသည့် စည်းကမ်းချက်များနှင့်အညီ လုပ်ငန်းဆောင်ရွက်ရန် ပျက်ကွက်ကြောင်း သို့မဟုတ် စည်းကမ်းချက်ကို ချိုးဖောက်ကြောင်း တွေ့ရှိပါက အာမခံကြေးကို နိုင်ငံတော်ဘဏ္ဍာငွေအဖြစ် သိမ်းဆည်းခံရမည့်အပြင် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ကို ပြန်လည်ရုပ်သိမ်းခြင်းခံရမည်။

အခန်း(၈)

မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူများအား ပံ့ပိုးဆောင်ရွက်ခြင်း

၂၃။ ဝဟိုကော်မတီသည် -

- (က) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက စိုက်ပျိုးရေး သို့မဟုတ် မွေးမြူရေး လုပ်ငန်းအတွက် နည်းပညာ၊ မျိုးကောင်းမျိုးသန့်နှင့် အခြားပံ့ပိုးမှုများကို ဆက်သွယ်တောင်းခံလာလျှင် လိုအပ်သလို ကူညီပံ့ပိုးပေးနိုင်သည်။
- (ခ) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက ရင်းနှီးမြှုပ်နှံမှုအတွက် ချေးငွေများ ရရှိလိုလျှင်လည်းကောင်း၊ ပံ့ပိုးပစ္စည်းနှင့် ဝန်ဆောင်မှု အကူအညီရရှိလိုလျှင်လည်းကောင်း သက်ဆိုင်ရာ ဌာန၊ အဖွဲ့အစည်းသို့ စိစစ်ထောက်ခံပေးနိုင်သည်။
- (ဂ) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူက လုပ်ငန်းအကောင်အထည်ဖော် ဆောင်ရွက်ပြီးနောက် မှန်တိုင်းကျရောက်ခြင်းကဲ့သို့သော သဘာဝဘေးအန္တရာယ်ကြောင့် ကြီးမားသည့် ပျက်စီးဆုံးရှုံးမှုများ ဖြစ်ပေါ်ပါက နိုင်ငံတော်မှ အထူးချေးငွေရရှိရေးအတွက် သက်ဆိုင်ရာဝန်ကြီးဌာနသို့ ထောက်ခံပေးနိုင်သည်။

၂၄။ ဝဟိုကော်မတီသည် သတ်မှတ်ကာလအတွင်း စည်းကမ်းချက်များနှင့်အညီ ပြီးစီးသည်အထိ လုပ်ငန်း အကောင်အထည်ဖော်ဆောင်ရွက်သော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူများအား အာမခံကြေး ပြန်လည်ထုတ်ပေးရမည်။

၂၅။ ဝဟိုကော်မတီသည်-

- (က) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိထားသူက လုပ်ငန်းများ အကောင် အထည်ဖော်ဆောင်ရွက်ရာတွင် ဒေသခံတောင်သူလယ်သမားများနှင့် အငြင်းပွားခြင်း၊ ဟန့်တား နှောင့်ယှက်ခြင်း၊ ကျူးကျော်ဝင်ရောက်လုပ်ကိုင်ခြင်း၊ အကျိုးပျက်ဆီးခြင်းများ ပြုလုပ်ခံရကြောင်း တင်ပြလာလျှင် သက်ဆိုင်ရာဌာန၊ အဖွဲ့အစည်းများနှင့် ဦးစွာညှိနှိုင်းပေးရမည်။ ညှိနှိုင်း၍မရပါက ဥပဒေအတိုင်း ဆောင်ရွက်ရမည်။
- (ခ) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ချထားပေးသော မြေဧရိယာအပေါ်တွင် ယခင်ကတည်းက လက်ရှိစိုက်ပျိုးလုပ်ကိုင်နေသော ဒေသခံတောင်သူလယ်သမားများ၏ စိုက်ပျိုးမြေများ ပါဝင်နေပါက တရားဝင်လုပ်ကိုင်ခွင့် ရရှိထားခြင်းမရှိသည့်တိုင် နစ်နာမှုမရှိစေရန် ယင်းတို့၏ ဆန္ဒအပေါ် ညှိနှိုင်းဆောင်ရွက်ပေးရမည်။
- (ဂ) မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ချထားပေးသောမြေဧရိယာအပေါ်တွင် ယခင်ကတည်းက လုပ်ကိုင်ခွင့် ရရှိထားပြီးသော တောင်သူလယ်သမားများရှိပါက ၎င်းတို့ နစ်ဦးနှစ်ဖက် သဘောတူညီချက်ဖြင့် ဥပဒေနှင့်အညီ ဆက်လက်ဆောင်ရွက်စေရမည်။

အခန်း(၉)
ပြစ်မှုနှင့်ပြစ်ဒဏ်များ

၂၆။ မည်သူမဆို ဤဥပဒေအရ မြေလွတ်၊ မြေလပ်နှင့်မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရှိသော မြေပေါ်ရှိ ပစ္စည်းနှင့်စပ်လျဉ်း၍ အကျိုးဖျက်ဆီးကြောင်း ပြစ်မှုထင်ရှားစီရင်ခြင်းခံရလျှင် ထိုသူကို သုံးနှစ်ထက်မပိုသော ထောင်ဒဏ်ဖြစ်စေ၊ ကျပ်တစ်ဆယ်သိန်းထက်မပိုသော ငွေဒဏ်ဖြစ်စေ၊ ဒဏ်နှစ်ရပ်လုံးဖြစ်စေ ချမှတ်ရမည်။

၂၇။ မည်သူမဆို မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ရရှိသူကသော်လည်းကောင်း၊ ယင်း၏ကိုယ်စား တာဝန်ရှိသူကသော်လည်းကောင်း ခွင့်ပြုခြင်းမရှိဘဲ ဤဥပဒေအရ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရှိသောမြေတွင် ဝင်ရောက်ကျူးကျော်လုပ်ကိုင်ကြောင်း ပြစ်မှုထင်ရှား စီရင်ခြင်းခံရလျှင် ထိုသူကို နှစ်နှစ်ထက်မပိုသော ထောင်ဒဏ်ဖြစ်စေ၊ ကျပ်ငါးသိန်းထက်မပိုသော ငွေဒဏ်ဖြစ်စေ၊ ဒဏ်နှစ်ရပ်လုံးဖြစ်စေ ချမှတ်ရမည်။

၂၈။ မည်သူမဆို မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ရရှိသူကိုဖြစ်စေ၊ ထိုသူ၏ သဘော တူခွင့်ပြုချက်အရ လုပ်ကိုင်သူဖြစ်စေ ဤဥပဒေအရ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ရှိသောမြေတွင် လုပ်ငန်းဆောင်ရွက်မှုကို ဟန့်တားနှောင့်ယှက်ကြောင်း ပြစ်မှုထင်ရှား စီရင်ခြင်းခံရလျှင် ထိုသူကို တစ်နှစ်ထက်မပိုသော ထောင်ဒဏ်ဖြစ်စေ၊ ကျပ်သုံးသိန်းထက်မပိုသော ငွေဒဏ်ဖြစ်စေ၊ ဒဏ်နှစ်ရပ်လုံး ဖြစ်စေ ချမှတ် ရမည်။

၂၉။ မည်သူမဆို ဤဥပဒေအရ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ လုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့် ပြန်လည်ရပ်သိမ်း ထားသည့် မြေပေါ်မှ ထွက်ခွာဖယ်ရှားပေးရန် ပျက်ကွက်ကြောင်း ပြစ်မှုထင်ရှားစီရင်ခြင်းခံရလျှင် ထိုသူကို တစ်နှစ် ထက်မပိုသော ထောင်ဒဏ်ဖြစ်စေ၊ ကျပ်သုံးသိန်းထက်မပိုသော ငွေဒဏ်ဖြစ်စေ၊ ဒဏ်နှစ်ရပ်လုံးဖြစ်စေ ချမှတ်ရမည်။

အခန်း(၁၀)
အထွေထွေ

၃၀။ အခန်း (၉) ပါ ပြစ်မှုများကို ရဲအရေးယူပိုင်ခွင့်ရှိသော ပြစ်မှုများအဖြစ်သတ်မှတ်သည်။

၃၁။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိသူအား လုပ်ငန်း ဆောင်ရွက်မှုနှင့် ပြီးစီးမှုအခြေအနေကို သတ်မှတ်ချက်များနှင့်အညီ တင်ပြစေနိုင်သည်။

၃၂။ ဗဟိုကော်မတီသည် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲမှုနှင့် စပ်လျဉ်း၍ ဆောင်ရွက်မှုကို ပြည်ထောင်စုအစိုးရအဖွဲ့သို့ ခြောက်လလျှင် တစ်ကြိမ် တင်ပြရမည်။ မူဝါဒဆိုင်ရာ အဆုံးအဖြတ်ခံယူရန် ပေါ်ပေါက် ပါက နိုင်ငံတော်သမ္မတထံသို့ နည်းလမ်းတကျတင်ပြ၍ လမ်းညွှန်မှုခံယူရမည်။

၃၃။ ဤဥပဒေအရဖွဲ့စည်းသော ဗဟိုကော်မတီသည် ဤဥပဒေမပြဋ္ဌာန်းမီက ဖွဲ့စည်းခဲ့သော မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေး ဗဟိုအဖွဲ့၏ တာဝန်နှင့် လုပ်ပိုင်ခွင့်များကို ဆက်ခံဆောင်ရွက်ရမည်။

၃၄။ ဤဥပဒေပါ ပြဋ္ဌာန်းချက်များ အကောင်အထည်ဖော်ဆောင်ရွက်ရာတွင်-
(က) ဝန်ကြီးဌာနသည် လိုအပ်သော နည်းဥပဒေများ၊ စည်းမျဉ်းနှင့် စည်းကမ်းများကို ပြည်ထောင်စု အစိုးရ အဖွဲ့၏ သဘောတူညီချက်ဖြင့် ထုတ်ပြန်နိုင်သည်။

(ခ) ဝန်ကြီးဌာနနှင့် ဗဟိုကော်မတီတို့သည် လိုအပ်သော အမိန့်ကြော်ငြာစာ၊ အမိန့်၊ ညွှန်ကြားချက်နှင့် လုပ်ထုံးလုပ်နည်းများကို ထုတ်ပြန်နိုင်သည်။

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် ဖွဲ့စည်းပုံအခြေခံဥပဒေအရ ကျွန်ုပ်လက်မှတ်ရေးထိုးသည်။

(ပုံ)သိန်းစိန်
နိုင်ငံတော်သမ္မတ
ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်

လယ်ယာမြေဥပဒေ

(၂၀၁၂ ခုနှစ်၊ ပြည်ထောင်စုလွှတ်တော်ဥပဒေအမှတ် ၁၁။)

၁၃၇၃ ခုနှစ်၊ တန်ခူးလဆန်း ၈ ရက်

(၂၀၁၂ ခုနှစ်၊ မတ်လ ၃၀ ရက်)

ပြည်ထောင်စုလွှတ်တော်သည် ဤဥပဒေကို ပြဋ္ဌာန်းလိုက်သည်။

အခန်း(၁)

အမည်၊ စတင်အာဏာတည်ခြင်းနှင့် အဓိပ္ပာယ်ဖွင့်ဆိုချက်များ

- ၁။ ဤဥပဒေကို လယ်ယာမြေဥပဒေဟု ခေါ်တွင်စေရမည်။
- ၂။ ဤဥပဒေသည် နိုင်ငံတော်သမ္မတက အမိန့်ကြော်ငြာစာဖြင့် သတ်မှတ်သည့်နေ့ရက်တွင် စတင် အာဏာ တည်ရမည်။
- ၃။ ဤဥပဒေတွင်ပါရှိသော အောက်ပါစကားရပ်များသည် ဖော်ပြပါအတိုင်း အဓိပ္ပာယ်သက်ရောက်စေရမည် -
 - (က) လယ်ယာမြေ ဆိုသည်မှာ လယ်မြေ၊ ယာမြေ၊ ကိုင်းကျွန်းမြေ၊ တောင်ယာမြေ၊ နှစ်ရှည်ပင် စိုက်ပျိုးသော မြေ၊ နေမြေ၊ ဥယျာဉ်မြေဟုသော်လည်းကောင်း၊ ဟင်းသီးဟင်းရွက်၊ ပန်းမန်စိုက်ပျိုးသည့် မြေဟုသော် လည်းကောင်း၊ မြေနုကျွန်းမြေဟုသော်လည်းကောင်း သတ်မှတ်သည့် မြေများကို ဆိုသည်။ ယင်းစကား ရပ်တွင် မြို့နယ်နိမိတ်၊ ကျေးရွာနယ်နိမိတ်အတွင်းရှိ လူနေအိမ်ရာများ၊ ဘာသာရေးအဆောက်အအုံနှင့် ပရဝက်များ၊ အများပိုင်ဆိုင်၍ စိုက်ပျိုးရေးအတွက် အသုံးမပြုသောမြေများ မပါဝင်။
 - (ခ) လယ်မြေ ဆိုသည်မှာ သဘာဝအရသော်လည်းကောင်း၊ လူတို့ဖန်တီးသော နည်းလမ်းအရသော် လည်းကောင်း စိုက်ပျိုးရေးရယူပြီး ရေထိန်းသိမ်းနိုင်စေရန် ဆောင်ရွက်ထားသည့် စပါးသီးနှံ အဓိက စိုက်ပျိုးသောမြေကို ဆိုသည်။
 - (ဂ) မြေနုကျွန်းမြေ ဆိုသည်မှာ ရေအောက်သို့နှစ်မြုပ်ခဲ့ပြီး နှစ်စဉ် ရေကြောင်းအနေအထားအရ မြေသားနှင့် ပုံသဏ္ဍာန်ပြောင်းလဲသည့် ခိုင်မြဲမှုမရှိသောမြေကို ဆိုသည်။
 - (ဃ) လယ်ယာမြေလုပ်ပိုင်ခွင့် ဆိုသည်မှာ နိုင်ငံတော်သည် မြေယာအားလုံး၏ ပင်ရင်းပိုင်ရှင်ဖြစ်၍ လယ်ယာ မြေကို စိုက်ပျိုးထုတ်လုပ်မှု တိုးတက်မြှင့်တင်ရေးအလို့ငှာ ဤဥပဒေ၊ ဤဥပဒေအရ ထုတ်ပြန်သည့် နည်းဥပဒေ၊ စည်းမျဉ်း၊ စည်းကမ်းများနှင့်အညီ လက်ဝယ်ထားရှိ၍ စိုက်ပျိုးလုပ်ကိုင် အသုံးချခွင့်ပြုခြင်း ကိုဆိုသည်။ သို့ရာတွင် မြေပေါ် မြေအောက်ရှိ ကျောက်မျက်၊ သတ္တု၊ ရေနံနှင့်ဓာတ်ငွေ့ စသည့် သဘာဝ သယံဇာတများ ထုတ်ယူအသုံးချခွင့် မပါဝင်။
 - (င) တောင်သူလယ်သမား ဆိုသည်မှာ အောက်ဖော်ပြပါတစ်ရပ်ရပ်နှင့် ကိုက်ညီသူကိုဆိုသည် -
 - (၁) မြေကိုအသုံးပြု၍ စိုက်ပျိုးရေးလုပ်ငန်း သို့မဟုတ် မွေးမြူရေးလုပ်ငန်း သို့မဟုတ် လုပ်ငန်းနှစ်ရပ် စလုံးကို မိမိ၏ အဓိကအသက်မွေးဝမ်းကျောင်းအဖြစ် မိမိကိုယ်တိုင်လုပ်ကိုင်သူ သို့မဟုတ် မိမိ ကိုယ်တိုင် အခြားစိုက်လုပ်ကိုင်သူ။
 - (၂) ဆိုင်ရာနှစ်တွင် မြေကိုအသုံးပြု၍ စိုက်ပျိုးရေးလုပ်ငန်း သို့မဟုတ် မွေးမြူရေးလုပ်ငန်း သို့မဟုတ် လုပ်ငန်းနှစ်ရပ်လုံးကို မိမိ၏ အဓိကအသက်မွေးဝမ်းကျောင်းအဖြစ် လုပ်ငန်းလုပ်ကိုင်ချိန် တစ်လျှောက်လုံး ကိုယ်တိုင်ကြီးကြပ်လုပ်ကိုင်သူ။

- (၃) မြေကိုအသုံးပြု၍ ရာသီသီးနှံ၊ ဥယျာဉ်ခြံသီးနှံ၊ နှစ်ရှည်သီးနှံများ စိုက်ပျိုးထုတ်လုပ်ရန် သို့မဟုတ် စီးပွားဖြစ် မွေးမြူရေးလုပ်ငန်းကို လုပ်ကိုင်ရန်အလို့ငှာ အရင်းအနှီး မတည်စိုက်ထုတ်၍ လုပ်ငန်း လုပ်ကိုင်ချိန် တစ်လျှောက်လုံး ကိုယ်တိုင်လုပ်ကိုင်သူ သို့မဟုတ် ကြီးကြပ်စီမံလုပ်ကိုင်သူ၊
- (၄) မြေကိုအသုံးပြု၍ စိုက်ပျိုးရေး၊ မွေးမြူရေးဆိုင်ရာလုပ်ငန်းများတွင် ပါဝင်ဆောင်ရွက်နေသူ၊
- (၅) စိုက်ပျိုးရေး၊ မွေးမြူရေးလုပ်ငန်းများနှင့် ယင်းတို့နှင့်ဆက်နွယ်လျက်ရှိသော ထုတ်လုပ်မှုလုပ်ငန်း အလို့ငှာ မြေကိုအသုံးပြု၍ ပျိုးပင်၊ မျိုးစေ့၊ မျိုးနှင့် သားပေါက်များ ကိုယ်တိုင် ထုတ်လုပ်ရောင်းချသူ၊
- (စ) တောင်သူလယ်သမားအိမ်ထောင်သားစု ဆိုသည်မှာ သွေးသားတော်စပ်၍ဖြစ်စေ၊ အိမ်ထောင်မှုဖြင့် တော်စပ်၍ဖြစ်စေ၊ အတူတကွနေထိုင်လျက် ၎င်းအိမ်ထောင်သားစုတွင် အကြီးအကဲဖြစ်သူ တောင်သူ လယ်သမားတစ်ဦး၏ မိသားစုဝင်များကို ဆိုသည်။
- (ဆ) အိမ်ထောင်သားစုအကြီးအကဲ ဆိုသည်မှာ အိမ်ထောင်သားစုတစ်စု၏ အကြီးအကဲဖြစ်၍ ထိုအိမ်ထောင် သားစုတွင် လုပ်ငန်းများကို ခေါင်းဆောင်လုပ်ကိုင်သူကို ဆိုသည်။
- (ဇ) အဆောက်အအုံဖြင့် တိုးတက်ကောင်းမွန်စေရန်ပြုပြင်ခြင်း ဆိုသည်မှာ လယ်ယာမြေကို လက်ရှိ လုပ်ပိုင် ခွင့်ရှိသူ၏ သို့မဟုတ် ထိုလုပ်ပိုင်ခွင့်ရှိသူ၏ လက်ရှိမရမီ ယင်းလယ်ယာမြေကို အခြားလုပ်ပိုင်ခွင့် ရှိသူများ၏ စရိတ်ဖြင့်သော်လည်းကောင်း၊ လုပ်အားဖြင့်သော်လည်းကောင်း ပြုပြင်ခြင်းကြောင့် လယ်ယာမြေ၏တန်ဖိုးကို ထာဝစဉ်ဖြင့်စေသည့် ပြုပြင်ခြင်းကို ဆိုလိုသည်။ ယင်းစကားရပ်တွင် လယ်ယာလုပ်ကိုင်သူနေထိုင်ရန် သို့မဟုတ် လယ်ယာလုပ်ငန်းကို အထောက်အပံ့ဖြစ်စေရန် တည်ဆောက် ပြုလုပ်ထားသော အဆောက်အအုံ၊ ရေထုတ်ရေသွင်းအတွက် လုပ်ဆောင်ထားမှုများ၊ ဆည်မြောင်းများ၊ ကန်များ၊ ရေတွင်းများ၊ ရေကာတာများ၊ လမ်းများနှင့် အခြားသော ထာဝစဉ် တိုးတက် ကောင်းမွန်စေရန် ပြုလုပ်သည့် လုပ်ဆောင်မှုများပါဝင်သည်။ သို့ရာတွင် ထွန်ယက်စိုက်ပျိုးရေး အတွက် မြေရှင်းခြင်း၊ ကန်သင်းပြုလုပ်ခြင်းနှင့် ထာဝစဉ် မတည်မြဲသည့် တိုးတက်ကောင်းမွန်စေရန် ပြုပြင်သော လုပ်ဆောင်ထားမှုများ မပါဝင်။
- (ဈ) အုပ်ထိန်းသူ ဆိုသည်မှာ အရွယ်မရောက်သော သူကိုသော်လည်းကောင်း၊ စိတ်ပေါ့သွပ်သူကိုသော် လည်းကောင်း၊ ထိုသူတစ်ဦး၏ ပစ္စည်းကို သို့မဟုတ် ပစ္စည်းနှင့်တကွ လူကိုသော်လည်းကောင်း၊ အုပ်ထိန်းစောင့်ရှောက်ရေးအတွက် သက်ဆိုင်ရာ စီရင်ပိုင်ခွင့်အာဏာရှိသည့် တရားရုံးက ခန့်အပ်သူကို ဆိုသည်။
- (ည) တောင်သူလယ်သမားအဖွဲ့အစည်း ဆိုသည်မှာ ကျေးလက်စီးပွားရေး ဖွံ့ဖြိုးတိုးတက်မှုအတွက် အထောက်အကူပြုစေရန် ထုတ်ပြန်ထားသော ဥပဒေတစ်ရပ်ရပ်နှင့်အညီ ဖွဲ့စည်းထားသော တောင်သူ လယ်သမားအဖွဲ့အစည်းကို ဆိုသည်။
- (ဋ) ဝန်ကြီးဌာန ဆိုသည်မှာ ပြည်ထောင်စုအစိုးရအဖွဲ့၊ လယ်ယာစိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာနကို ဆိုသည်။
- (ဌ) ဦးစီးဌာန ဆိုသည်မှာ ကြေးတိုင်နှင့်မြေတရားဦးစီးဌာနကိုဆိုသည်။

**အခန်း(၂)
လယ်ယာမြေကို လုပ်ပိုင်ခွင့်ပြုခြင်း**

၄။ လယ်ယာမြေကို အသုံးပြုခွင့်ရရှိထားသူသည် လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိရန် သက်ဆိုင်ရာ ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စု လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့မှတစ်ဆင့် မြို့နယ်ဦးစီးဌာနရုံးသို့ သတ်မှတ်ချက်များနှင့်အညီ လျှောက်ထားရမည်။

၅။ မြို့နယ်ဦးစီးဌာနရုံးသည် ပုဒ်မ ၄ အရ လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိရန် လျှောက်ထားချက်နှင့်စပ်လျဉ်း၍ သတ်မှတ်ချက်များနှင့်အညီ စစ်စ်ပြီး သက်ဆိုင်ရာ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သို့ တင်ပြရမည်။

၆။ မြို့နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သည် ဤဥပဒေအာဏာတည်သည့်နေ့ရက်တွင် တည်ရှိနေသော လယ်ယာမြေများနှင့်စပ်လျဉ်း၍ အောက်ပါလူပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်းအား သက်ဆိုင်ရာ ခရိုင်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၏ သဘောတူညီချက်ဖြင့် မြို့နယ်ဦးစီးဌာနရုံးတွင် သတ်မှတ်ချက်များနှင့်အညီ မှတ်ပုံတင်ကြေး ပေးဆောင်စေ၍ မှတ်ပုံတင်ပြီး လယ်ယာမြေလုပ်ပိုင်ခွင့်ပြုလက်မှတ် ထုတ်ပေးရမည် -

(က) လူပုဂ္ဂိုလ်ဖြစ်ပါက -

- (၁) လယ်ယာမြေကို အသုံးပြုခွင့် ရရှိထားသောထိုအိမ်ထောင်စုသည် တောင်သူလယ်သမား အိမ်ထောင်သားစု သို့မဟုတ် အိမ်ထောင်သားစုဝင်ဖြစ်ရမည်။
 - (၂) လယ်ယာမြေကို အသုံးပြုခွင့်ရရှိထားသော ထိုအိမ်ထောင်သားစုအကြီးအကဲ သို့မဟုတ် ထိုအိမ်ထောင်သားစုတွင် ပါဝင်သူတစ်ဦး သို့မဟုတ် အုပ်ထိန်းသူသည် ဤဥပဒေ ပြဋ္ဌာန်းအတည် မပြုမီ တည်ဆဲမြေယာဥပဒေများနှင့်အညီ တရားဝင်လက်ရှိလက်ငုတ် လုပ်ကိုင်နေသူဖြစ်ရမည်။
 - (၃) ဤဥပဒေပြဋ္ဌာန်းပြီးနောက် ဤဥပဒေနှင့်ဖြစ်စေ၊ ဤဥပဒေအပြေသည့် နည်းဥပဒေ ပြဋ္ဌာန်းချက် များနှင့်အညီဖြစ်စေ တရားဝင်အကျိုးခံစားခွင့် ရရှိသူဖြစ်ရမည်။
 - (၄) အသက်(၁၈)နှစ် ပြည့်ပြီးသူ ဖြစ်ရမည်။
 - (၅) နိုင်ငံသား၊ ဧည့်နိုင်ငံသား သို့မဟုတ် နိုင်ငံသားပြုခွင့်ရသူ ဖြစ်ရမည်။
- (ခ) အဖွဲ့အစည်းဖြစ်ပါက လယ်ယာမြေကို အသုံးပြုခွင့် ရရှိထားသော အစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်း၊ အစိုးရမဟုတ်သောအဖွဲ့အစည်း၊ ကုမ္ပဏီ သို့မဟုတ် အသင်းအဖွဲ့ဖြစ်ရမည်။

၇။ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ဤဥပဒေအာဏာတည်ပြီးနောက် လယ်ယာမြေလုပ်ပိုင်ခွင့် ပြန်လည်သိမ်းယူသော လယ်ယာမြေနှင့် နိုင်ငံတော်က အခါအားလျော်စွာ ဖော်ထုတ်သော လယ်ယာမြေများနှင့် စပ်လျဉ်း၍ အောက်ပါ လူပုဂ္ဂိုလ် သို့မဟုတ် အဖွဲ့အစည်းကို ခရိုင်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ သဘောတူညီချက် ဖြင့် မြို့နယ်ဦးစီးဌာနရုံးတွင် သတ်မှတ်ချက်များနှင့်အညီ မှတ်ပုံတင်ကြေးပေးဆောင်စေ၍ မှတ်ပုံတင်ပြီး လယ်ယာမြေ လုပ်ပိုင်ခွင့်ပြု လက်မှတ် ထုတ်ပေးရမည်-

(က) လူပုဂ္ဂိုလ်ဖြစ်ပါက-

- (၁) လယ်ယာမြေကိုအသုံးပြု၍ စိုက်ပျိုးရေးလုပ်ငန်းတွင် ပါဝင်ဆောင်ရွက်နေသူဖြစ်ရမည်။
 - (၂) အကြောင်းထူးမရှိလျှင် သက်ဆိုင်ရာ ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စုတွင် အခြေချနေထိုင် သူဖြစ်ရမည်။
 - (၃) အသက်(၁၈)နှစ် ပြည့်ပြီးသူဖြစ်ရမည်။
 - (၄) နိုင်ငံသား၊ ဧည့်နိုင်ငံသား သို့မဟုတ် နိုင်ငံသားပြုခွင့်ရသူဖြစ်ရမည်။
- (ခ) အဖွဲ့အစည်းဖြစ်ပါက လယ်ယာမြေတွင် စိုက်ပျိုးရေးလုပ်ငန်းကို အမှန်တကယ်လုပ်ကိုင်လိုသော အစိုးရ ဌာန၊ အစိုးရအဖွဲ့အစည်း၊ အစိုးရမဟုတ်သော အဖွဲ့အစည်း၊ ကုမ္ပဏီ သို့မဟုတ် အသင်းအဖွဲ့ ဖြစ်ရမည်။

၈။ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ဤဥပဒေပါ ပြဋ္ဌာန်းချက်များနှင့်အညီ လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို ဝယ်ယူခြင်း၊ လဲလှယ်ရယူခြင်း သို့မဟုတ် ပေးကမ်းသည်ကို လက်ခံခြင်းပြုသူအားလည်းကောင်း၊ အမွေဆက်ခံခြင်းဖြင့် လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို ရရှိသူအားလည်းကောင်း၊ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ရရှိ၍ စိုက်ပျိုးမြေအဖြစ် ဖော်ထုတ်စိုက်ပျိုးပြီးနောက် ဤဥပဒေနှင့်အညီ လယ်ယာမြေလုပ်ပိုင်ခွင့် လျှောက်ထားသူအား လည်းကောင်း၊ မြို့နယ်ဦးစီးဌာနရုံးတွင် သတ်မှတ်ချက်များနှင့်အညီ မှတ်ပုံတင်ကြေးပေးဆောင်စေ၍ မှတ်ပုံတင်ပြီး လယ်ယာမြေ လုပ်ပိုင်ခွင့်ပြုလက်မှတ် ထုတ်ပေးရမည်။



အခန်း(၃)
လယ်ယာမြေ လုပ်ပိုင်ခွင့်ရရှိသူ၏ အခွင့်အရေးများ

- ၉။ လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိသူသည် အောက်ပါအခွင့်အရေးများကို ရရှိစေရမည် -
- (က) လယ်ယာမြေကို လက်ရှိထားပိုင်ခွင့်၊ လယ်ယာမြေ လုပ်ပိုင်ခွင့်၊ ယင်းသို့ လုပ်ပိုင်ခွင့်မှ ပေါ်ထွက်လာသည့် အကျိုးအမြတ်ကို ခံစားပိုင်ခွင့်၊
 - (ခ) လယ်ယာမြေကို အားလုံးဖြစ်စေ၊ တစ်စိတ်တစ်ပိုင်းဖြစ်စေ လုပ်ပိုင်ခွင့်အား သတ်မှတ်ထားသော စည်းကမ်းချက်များနှင့်အညီ ရောင်းချခွင့်၊ ပေါင်နှံခွင့်၊ ငှားရမ်းခွင့်၊ လဲလှယ်ခွင့်နှင့် ပေးကမ်းခွင့်၊
 - (ဂ) လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို အမွေဆက်ခံခြင်းနှင့်စပ်လျဉ်း၍ အငြင်းပွားမှု ပေါ်ပေါက်လာပါက တည်ဆဲဥပဒေနှင့်အညီ သက်ဆိုင်ရာ တရားရုံး၏ အဆုံးအဖြတ်ခံယူနိုင်ခွင့်၊
 - (ဃ) သတ်မှတ်သည့် စည်းကမ်းချက်များကို ဖောက်ဖျက်ခြင်း မရှိသရွေ့ လယ်ယာမြေလုပ်ပိုင်ခွင့်၊
 - (င) လယ်ယာမြေတွင် စိုက်ပျိုးရေးလုပ်ငန်း ဖွံ့ဖြိုးတိုးတက်ရေးအတွက် ကျေးလက်သမဝါယမအသင်း၏ ရင်းနှီးမြှုပ်နှံမှုနှင့်လည်းကောင်း၊ ပုဂ္ဂလိကရင်းနှီးမြှုပ်နှံသူများနှင့်လည်းကောင်း အကျိုးတူလုပ်ကိုင်ခွင့်၊
 - (စ) လယ်ယာမြေတွင် နိုင်ငံခြားသား သို့မဟုတ် နိုင်ငံခြားသားပါဝင်သောအဖွဲ့အစည်းနှင့် ပူးပေါင်း၍ ပြည်ထောင်စုသမ္မတ မြန်မာနိုင်ငံတော် နိုင်ငံခြားရင်းနှီးမြှုပ်နှံမှုဥပဒေနှင့်အညီ အကျိုးတူလုပ်ကိုင်ခွင့်။
- ၁၀။ ဤ ဥပဒေ ပုဒ်မ ၄၊ ၅၊ ၆၊ ၇၊ ၈ နှင့် ၉ တို့ပါ ပြဋ္ဌာန်းချက်များသည် မြေနုကျွန်းချထားခြင်းနှင့် မသက်ဆိုင်စေရ။
- ၁၁။ မြေနုကျွန်းချထားရေးကိစ္စရပ်များအတွက် ဤဥပဒေအရပြုသည့် နည်းဥပဒေတွင် ထည့်သွင်းပြဋ္ဌာန်းရမည်။

အခန်း(၄)
လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိသူ လိုက်နာရမည့် စည်းကမ်းချက်များ

- ၁၂။ လယ်ယာမြေလုပ်ပိုင်ခွင့် ရရှိသူသည် -
- (က) ဤဥပဒေတွင် ပြဋ္ဌာန်းထားသည့်အတိုင်း လယ်ယာမြေကိုလုပ်ကိုင်ရမည်။
 - (ခ) လယ်ယာမြေနှင့်စပ်လျဉ်း၍ ဝန်ကြီးဌာနက စည်းကြပ်သောမြေခွန်နှင့် အခြားအခွန်အခများကို ပေးဆောင်ရမည်။
 - (ဂ) လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ငှားရမ်းခြင်း၊ လဲလှယ်ခြင်းနှင့် ပေးကမ်းခြင်းတို့ကို ဆောင်ရွက်သည့်အခါ ဦးစီးဌာနကသတ်မှတ်သည့် တံဆိပ်ခေါင်းခွန်နှင့် စာချုပ်စာတမ်းမှတ်ပုံတင်ခတို့ကို ပေးဆောင်၍ သက်ဆိုင်ရာမြို့နယ် ဦးစီးဌာနရုံးတွင် မှတ်ပုံတင်ရမည်။
 - (ဃ) တည်ဆဲဥပဒေနှင့်အညီ အမွေဆက်ခံခြင်းဖြင့် လယ်ယာမြေ လုပ်ပိုင်ခွင့်ကို ရရှိသည့်အခါ သတ်မှတ်ချက်များနှင့်အညီ သက်ဆိုင်ရာမြို့နယ်ဦးစီးဌာနရုံးတွင် မှတ်ပုံတင်ရမည်။
 - (င) စိုက်ပျိုးထုတ်လုပ်မှု အရင်းအနှီးအတွက်သာ လယ်ယာမြေ လုပ်ပိုင်ခွင့်ကို ပေါင်နှံခွင့်ရှိပြီး အစိုးရဘဏ် သို့မဟုတ် အစိုးရက အသိအမှတ်ပြုသော ဘဏ်တွင်သာ ပေါင်နှံရမည်။
 - (စ) သက်ဆိုင်ရာလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့က တရားဝင်ချထားခြင်းမရှိဘဲ ကျူးကျော်လုပ်ကိုင်ခြင်းမပြုရ။
 - (ဆ) လယ်ယာမြေကို ခွင့်ပြုမိန့်မရရှိဘဲ အခြားနည်း သုံးစွဲခြင်းမပြုရ။
 - (ဇ) လယ်ယာမြေကို မူလစိုက်ပျိုးလျက်ရှိသော သီးနှံအမျိုးအစားမှ အခြားသီးနှံအမျိုးအစားသို့ ခွင့်ပြုချက်မရှိဘဲ ပြောင်းလဲစိုက်ပျိုးခြင်းမပြုရ။
 - (ဈ) ခိုင်လုံသောအကြောင်းပြချက်မရှိဘဲ လယ်ယာမြေကို လုပ်ထားခြင်းမပြုရ။

(ည) လယ်ယာမြေလုပ်ပိုင်ခွင့် မရမီကာလအတွင်း သို့မဟုတ် လယ်ယာမြေလုပ်ပိုင်ခွင့်နှင့် စပ်လျဉ်း၍ အငြင်းပွားမှုဖြစ်ပေါ်နေသော ကာလအတွင်း လယ်ယာမြေကို ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ငှားရမ်းခြင်း၊ လဲလှယ်ခြင်း သို့မဟုတ် ပေးကမ်းခြင်းမပြုရ။

၁၃။ ဤဥပဒေအာဏာတည်ပြီးသည့်နောက် လယ်ယာမြေလုပ်ပိုင်ခွင့် အငြင်းပွားမှု အရှုပ်အရှင်ဖြစ်လာလျှင် ဦးစီးဌာနတွင် မှတ်ပုံတင်ထားပြီးမှသာ တရားဝင်ဖြေရှင်းဆောင်ရွက်နိုင်ခွင့်ရှိသည်။

၁၄။ လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိသူသည် လယ်ယာမြေ လုပ်ပိုင်ခွင့်အားလုံးကိုဖြစ်စေ၊ တစ်စိတ်တစ်ပိုင်းကိုဖြစ်စေ နိုင်ငံတော်အစိုးရ၏ ခွင့်ပြုချက်မရရှိဘဲ မည်သည့်နိုင်ငံခြားသား သို့မဟုတ် နိုင်ငံခြားသားပါဝင်သည့် အဖွဲ့အစည်းကိုမျှ ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ငှားရမ်းခြင်း၊ လဲလှယ်ခြင်း သို့မဟုတ် ပေးကမ်းခြင်းမပြုရ။

**အခန်း(၅)
လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့ အဆင့်ဆင့်ဖွဲ့စည်းခြင်း**

၁၅။ ပြည်ထောင်စုအစိုးရအဖွဲ့သည် -

- (က) လယ်ယာစိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန ပြည်ထောင်စုဝန်ကြီးက ဥက္ကဋ္ဌအဖြစ်လည်းကောင်း၊ လယ်ယာစိုက်ပျိုးရေးနှင့် ဆည်မြောင်းဝန်ကြီးဌာန ဒုတိယဝန်ကြီးက ဒုတိယဥက္ကဋ္ဌ အဖြစ်လည်းကောင်း၊ ကြေးတိုင်နှင့်မြေစာရင်း ဦးစီးဌာနညွှန်ကြားရေးမှူးချုပ်က အတွင်းရေးမှူးအဖြစ်လည်းကောင်း၊ သက်ဆိုင်ရာအစိုးရဌာန၊ အစိုးရအဖွဲ့အစည်းများမှ အကြီးအမှူးများက အဖွဲ့ဝင်များအဖြစ်လည်းကောင်း ပါဝင်သော ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့ကို ဖွဲ့စည်းရမည်။
- (ခ) ပုဒ်မခွဲ (က) အရ ဖွဲ့စည်းသော ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့ကို အခါအားလျော်စွာ ပြင်ဆင်ဖွဲ့စည်းနိုင်သည်။

၁၆။ ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည်-

- (က) အောက်ပါလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့ အဆင့်ဆင့်ကို ဖွဲ့စည်းပေးရမည်-
 - (၁) တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၊
 - (၂) ခရိုင်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၊
 - (၃) မြို့နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၊
 - (၄) ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စု လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့။
- (ခ) ပုဒ်မခွဲ (က) အရ ဖွဲ့စည်းသော လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့ အဆင့်ဆင့်ကို အခါအားလျော်စွာ ပြင်ဆင်ဖွဲ့စည်းနိုင်သည်။

**အခန်း (၆)
ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ တာဝန်နှင့်လုပ်ပိုင်ခွင့်များ**

၁၇။ ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ တာဝန်နှင့်လုပ်ပိုင်ခွင့်များမှာအောက်ပါအတိုင်းဖြစ်သည် -

- (က) တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်၊ ခရိုင်၊ မြို့နယ်နှင့်ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စု လယ်ယာမြေ စီမံခန့်ခွဲမှု အဖွဲ့အဆင့်ဆင့်တို့၏ တာဝန်နှင့် လုပ်ပိုင်ခွင့်များကိုသတ်မှတ်ခြင်း၊
- (ခ) လယ်ယာမြေလုပ်ပိုင်ခွင့် မှတ်ပုံတင်ခြင်း၊ လယ်ယာမြေလုပ်ပိုင်ခွင့်ပြုလက်မှတ် ထုတ်ပေးခြင်း၊ လယ်ယာမြေလုပ်ပိုင်ခွင့်၊ အသုံးပြုခွင့်ပေးခြင်းနှင့် အငြင်းပွားမှု ဖြေရှင်းခြင်းတို့နှင့်စပ်လျဉ်း၍ လမ်းညွှန်ခြင်းနှင့် ကြီးကြပ်ကွပ်ကဲခြင်း။

- (ဂ) လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ငှားရမ်းခြင်း၊ လဲလှယ်ခြင်း၊ ပေးကမ်းခြင်းတို့နှင့် စပ်လျဉ်း၍ ဆောင်ရွက်သည့်ကိစ္စရပ်များကို လမ်းညွှန်ခြင်း၊ ကြီးကြပ်ကွပ်ကဲခြင်း၊ (ဃ) ပုဒ်မ ၁၉၊ ပုဒ်မခွဲ (ဂ) နှင့် (ဃ) တို့ပါ စီမံခန့်ခွဲရေး ပြစ်ဒဏ်တစ်ရပ်ရပ် ချမှတ်ခြင်းခံရသူ၏ လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို လည်းကောင်း၊ ပုဒ်မ ၃၁ နှင့် အကျုံးဝင်သော လယ်ယာမြေကိုလည်းကောင်း၊ ပုဒ်မ ၃၇ အရ ပြစ်ဒဏ် ချမှတ်ခြင်း ခံရသူ၏ လယ်ယာမြေလုပ်ပိုင်ခွင့်ကိုလည်းကောင်း ပြန်လည်ရုပ်သိမ်းခြင်း၊
- (င) ကျေးလက်ဒေသများနှင့် မြို့ပြဒေသများတွင် တိုးတက်လျက်ရှိ သော လူဦးရေနှင့် တိုးပွားလာသော အိမ်ထောင်စုများအတွက် အိမ်ရာတည်ဆောက်ရန် လိုအပ်ချက်အရ လယ်ယာမြေကိုအသုံးပြုရန် တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ ကျေးလက်နှင့် မြို့ပြအိမ်ရာ စီမံကိန်းများနှင့်စပ်လျဉ်းသည့် တင်ပြချက်များကို စိစစ်၍အတည်ပြုခြင်း၊
- (စ) ကျေးလက်နေပြည်သူလူထု၏ လူနေမှုဘဝ ဖွံ့ဖြိုးတိုးတက်ရေးနှင့် သက်ဆိုင်သည့် စာသင်ကျောင်း၊ ကျန်းမာရေးဌာန၊ ဆေးရုံ၊ ဆေးပေးခန်း၊ စာကြည့်တိုက်၊ ကျေးလက်ဈေး၊ သုသာန်နှင့် အခြား လိုအပ်သော အဆောက်အအုံများအတွက် လယ်ယာမြေကို အသုံးပြုရန်ကိစ္စနှင့်စပ်လျဉ်း၍ တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ တင်ပြချက်ကို စိစစ်ပြီး အတည်ပြုခြင်း၊
- (ဆ) လယ်ယာကဏ္ဍဖွံ့ဖြိုးတိုးတက်ရေးအတွက် လက်မှုလယ်ယာမှ ခေတ်မီ စက်မှုလယ်ယာစနစ်သို့ ကူးပြောင်းရာတွင်လိုအပ်သည့် လယ်ယာသုံးစက်နှင့် စက်ကိရိယာများထားရှိခြင်း၊ ဆန်စက်များ၊ သီးနှံ သိုလှောင်သည့် ဂိုဒေါင်များ၊ လိုအပ်သော ကုန်ထုတ်လမ်းများနှင့် အခြေခံအဆောက်အအုံများ တည်ဆောက်ရာတွင် လယ်ယာမြေကို အသုံးပြုရန်ကိစ္စနှင့်စပ်လျဉ်း၍ တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ တင်ပြချက်ကို စိစစ်ပြီး အတည်ပြုခြင်း၊
- (ဇ) လယ်ယာကဏ္ဍ ဖွံ့ဖြိုးတိုးတက်ရေးအတွက် လက်မှုလယ်ယာစနစ်မှ ခေတ်မီစက်မှုလယ်ယာစနစ်သို့ ကူးပြောင်းနိုင်ရန် လယ်ယာမြေပြုပြင်ခြင်းလုပ်ငန်းများအတွက် လယ်ယာမြေကို အသုံးပြုရန်ကိစ္စနှင့် စပ်လျဉ်း၍ တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ တင်ပြချက်ကို စိစစ်ပြီး အတည်ပြုခြင်း၊
- (ဈ) မြေနုကျွန်း လုပ်ပိုင်ခွင့်ချထားရေးနှင့် ယင်းလုပ်ပိုင်ခွင့် ရရှိသူများ၏ အခွင့်အရေးဆိုင်ရာမူဝါဒများ ချမှတ်ခြင်း၊ လမ်းညွှန်ခြင်းနှင့် ကြီးကြပ်ကွပ်ကဲခြင်း၊
- (ည) ရွှေ့ပြောင်းတောင်ယာ ခုတ်ထွင်စိုက်ပျိုးရေးလုပ်ငန်းနှင့် စပ်လျဉ်း၍ လမ်းညွှန်ခြင်းနှင့် ကြီးကြပ်ကွပ်ကဲခြင်း၊
- (ဋ) လယ်ယာမြေနှင့်စပ်လျဉ်း၍ ပြည်ထောင်စုအစိုးရအဖွဲ့က အခါအားလျော်စွာ ပေးအပ်သည့် လုပ်ငန်းတာဝန်များကို ဆောင်ရွက်ခြင်း။

၁၈။ ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ဤဥပဒေပါ ပြဋ္ဌာန်းချက်များအရ လယ်ယာမြေလုပ်ပိုင်ခွင့်ကို ရောင်းချခြင်း၊ ပေါင်နှံခြင်း၊ ငှားရမ်းခြင်း၊ လဲလှယ်ခြင်းနှင့် ပေးကမ်းခြင်းကိစ္စရပ်များအတွက် နှစ်ဦးသဘောတူစာချုပ်ကို ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စု လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့၏ ရှေ့မှောက်တွင်ချုပ်ဆို၍ သက်ဆိုင်ရာ မြို့နယ် ဦးစီးဌာနရုံး၌ မှတ်ပုံတင်ရာတွင် လယ်ယာမြေတန်ဖိုးကို ဒေသန္တရအခြေအနေအရ ဆီလျော်သောနှုန်းထားဖြစ်စေရန် သင့်လျော်သည့် လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့အား လုပ်ပိုင်ခွင့်အပ်နှင်းနိုင်သည်။

**အခန်း(၇)
စည်းကမ်းချက်များကိုလိုက်နာရန် ပျက်ကွက်၍ အရေးယူခြင်း**

၁၉။ ဤဥပဒေ ပုဒ်မ ၁၂ ပါ စည်းကမ်းချက်အားလုံးကိုဖြစ်စေ၊ စည်းကမ်းချက်တစ်ခုခုကိုဖြစ်စေ လိုက်နာရန် ပျက်ကွက်လျှင် ဝန်ကြီးဌာနက ဤကိစ္စ အလို့ငှာ ခန့်အပ်သည့် လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ဤဥပဒေနှင့် ဤ

ဥပဒေအရ ထုတ်ပြန်သော နည်းဥပဒေများနှင့်အညီ စုံစမ်းစစ်ဆေးပြီးနောက် အောက်ဖော်ပြပါ အမိန့်တစ်ရပ်ကိုဖြစ်စေ၊ တစ်ရပ်ထက်ပို၍ဖြစ်စေ ချမှတ်နိုင်သည် -

- (က) သတ်မှတ်သည့် ဒဏ်ကြေးငွေ ပေးဆောင်စေခြင်း၊
- (ခ) သတ်မှတ်သည့်နည်းလမ်းအတိုင်း လယ်ယာမြေကို ဆောင်ရွက်စေခြင်း၊
- (ဂ) လယ်ယာမြေပေါ်မှ နှင်ထုတ်ထိုက်သူများကို နှင်ထုတ်ခြင်း၊
- (ဃ) လယ်ယာမြေပေါ်တွင် ခွင့်ပြုချက်မရှိဘဲ ဆောက်လုပ်ထားသောအဆောက်အအုံများကို ဖယ်ရှားခြင်း။

၂၀။ ပုဒ်မ ၁၉ ပါ လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ယင်းပုဒ်မအရ ချမှတ်သောအမိန့်ကို လယ်ယာမြေ လုပ်ပိုင်ခွင့် ရရှိသူက လိုက်နာခြင်းမရှိလျှင် ယင်းအမိန့်ပါ သတ်မှတ်ရက်ကျော်လွန်ပါက သက်ဆိုင်ရာတရားရုံးသို့ ဦးတိုက် လျှောက်ထား တရားစွဲဆိုနိုင်သည်။

၂၁။ လယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိသူသည် ဝန်ကြီးဌာနက စည်းကြပ်ကောက်ခံသည့် အခွန်အခများကို ပေးဆောင် ရန် ပျက်ကွက်လျှင် တည်ဆဲဥပဒေများနှင့်အညီ ထိုအခွန်အခများကို မြေခွန်မပြေ ကျန်ငွေဖြစ်ဘိသကဲ့သို့ ကောက်ခံ ခြင်း ခံရမည်။

အခန်း(၈)
လယ်ယာမြေလုပ်ပိုင်ခွင့် အငြင်းပွားမှုဖြေရှင်းခြင်းနှင့် အယူခံခြင်း

၂၂။ လယ်ယာမြေ လုပ်ပိုင်ခွင့်နှင့်စပ်လျဉ်း၍ အငြင်းပွားမှုကို ရပ်ကွက် သို့မဟုတ် ကျေးရွာအုပ်စု လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သည် မူလမူခင်း ဖွင့်လှစ်၍ စုံစမ်းစစ်ဆေးခြင်း၊ ကြားနာခြင်းနှင့် ဆုံးဖြတ်ခြင်းပြုရမည်။

- ၂၃။ (က) ရပ်ကွက်နှင့်ကျေးရွာအုပ်စု လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့က ပုဒ်မ ၂၂ အရ ချမှတ်သောအမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို မကျေနပ်သူသည် ယင်းအမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို ချမှတ်သည့်နေ့မှ ရက်ပေါင်း ၃၀ အတွင်း သက်ဆိုင်ရာ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သို့ သတ်မှတ်ချက်များနှင့်အညီ အယူခံ နိုင်သည်။
- (ခ) မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ရပ်ကွက်နှင့် ကျေးရွာအုပ်စု လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့က ချမှတ်သည့် အမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို အတည်ပြုခြင်း၊ ပြင်ဆင်ခြင်း သို့မဟုတ် ပယ်ဖျက်ခြင်း ပြုနိုင်သည်။

- ၂၄။ (က) ပုဒ်မ ၂၃၊ ပုဒ်မခွဲ (ခ) အရ မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့က ချမှတ်သောအမိန့် သို့မဟုတ် ဆုံးဖြတ် ချက်ကို မကျေနပ်သူသည် ယင်းအမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို ချမှတ်သည့်နေ့မှ ရက်ပေါင်း ၃၀ အတွင်း သက်ဆိုင်ရာခရိုင် လယ်ယာမြေစီမံ ခန့်ခွဲမှုအဖွဲ့သို့ သတ်မှတ်ချက်များနှင့်အညီ အယူခံ နိုင်သည်။
- (ခ) ခရိုင်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သည် မြို့နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့က ချမှတ်သည့် အမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို အတည်ပြုခြင်း၊ ပြင်ဆင်ခြင်း သို့မဟုတ် ပယ်ဖျက်ခြင်း ပြုနိုင်သည်။

၂၅။ (က) ပုဒ်မ ၂၄၊ ပုဒ်မခွဲ(ခ)အရ ခရိုင်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့ကချမှတ်သော အမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက် ကို မကျေနပ်သူသည် ယင်းအမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို ချမှတ်သည့်နေ့မှ ရက်ပေါင်း ၆၀ အတွင်း သက်ဆိုင်ရာတိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သို့ သတ်မှတ်ချက်များနှင့် အညီ အယူခံနိုင်သည်။

- (ခ) တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သည် ခရိုင်လယ်ယာမြေစီမံခန့်ခွဲမှု အဖွဲ့က ချမှတ်သည့်အမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကို အတည်ပြုခြင်း၊ ပြင်ဆင်ခြင်း သို့မဟုတ် ပယ်ဖျက်ခြင်းပြုနိုင်သည်။
- (ဂ) တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၏ ဆုံးဖြတ်ချက်သည် အပြီးအပြတ် ဖြစ်စေရမည်။

**အခန်း (၉)
နစ်နာကြေးနှင့်လျော်ကြေးများ**

၂၆။ တည်ဆဲဥပဒေတစ်ရပ်ရပ်တွင် မည်သို့ပင်ပါရှိစေကာမူ နိုင်ငံတော်အကျိုးငှာဖြစ်စေ၊ အများပြည်သူအကျိုးငှာ ဖြစ်စေ သိမ်းယူသည့်လယ်ယာမြေနှင့် ယင်းလယ်ယာမြေပေါ်၌ အဆောက်အအုံနှင့် တိုးတက်ကောင်းမွန်စေရန် ပြုပြင်ခြင်းအပါအဝင် မူလလယ်ယာမြေ လုပ်ပိုင်ခွင့်ရရှိထားသူ ဆောင်ရွက်ထားသည့်ကိစ္စရပ်များအတွက် နစ်နာမှု လုံးဝမရှိစေရန် လျော်ကြေးပေးခြင်းနှင့် အခြားနည်းလမ်းဖြင့် စီမံဆောင်ရွက်ခြင်းတို့ကို သက်ဆိုင်ရာက ပြုလုပ်ပေး နိုင်ရေးနှင့်စပ်လျဉ်း၍ ဗဟိုလယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့သည် လိုအပ်သလို ညှိနှိုင်းဆောင်ရွက်ရမည်။

၂၇။ ပုဒ်မ ၁၇၊ ပုဒ်မခွဲ(ဃ)အရ ဗဟိုလယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့က လယ်ယာမြေလုပ်ပိုင်ခွင့်ကိုလည်းကောင်း၊ လယ်ယာမြေကိုလည်းကောင်း ပြန်လည်ရပ်သိမ်းခြင်းခံရသူသည် လျော်ကြေးရထိုက်ခွင့် မရှိစေရ။

**အခန်း (၁၀)
လယ်ယာမြေကို အသုံးပြုခြင်း**

၂၈။ မူလစိုက်ပျိုးလျက်ရှိသည့် သီးနှံအမျိုးအစားမှ အခြားသီးနှံအမျိုးအစားသို့ ပြောင်းလဲစိုက်ပျိုးခွင့်ပြုရန် လျှောက်ထားချက်နှင့်စပ်လျဉ်း၍-

- (က) ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် နိုင်ငံတော်၏ အဓိကစားသုံးသီးနှံဖြစ်သည့် ဆန်စပါးမူလုံမှုကို ထိခိုက်မှုမရှိစေရေးအတွက် သတ်မှတ်ချက်များနှင့်အညီစိစစ်ပြီး လယ်မြေတွင် အခြားသီးနှံ ပြောင်းလဲ စိုက်ပျိုးရန် ခွင့်ပြုနိုင်သည်။
- (ခ) သက်ဆိုင်ရာတိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ် လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် လယ်မြေမှတစ်ပါး လယ်ယာမြေတွင် သီးနှံပြောင်းလဲစိုက်ပျိုးရန်ဖြစ်ပါက သတ်မှတ်ချက်များနှင့်အညီ စိစစ်ပြီး ခွင့်ပြုနိုင် သည်။

၂၉။ နိုင်ငံတော်၏ ရေရှည်အမျိုးသားအကျိုးစီးပွားအလိုငှာ စီမံကိန်းလုပ်ငန်းကြီးများအတွက် လယ်ယာမြေကို အခြားနည်းဖြင့် အသုံးပြုရန်သက်ဆိုင်ရာစီမံကိန်း အကောင်အထည်ဖော်မည့် ဝန်ကြီးဌာနသည် ဗဟိုလယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၏ သဘောထားမှတ်ချက်ရယူပြီး ပြည်ထောင်စုအစိုးရအဖွဲ့၏ ခွင့်ပြုချက်ဖြင့် ဆောင်ရွက်နိုင်သည်။

- ၃၀။ အများပြည်သူအကျိုးငှာ လယ်ယာမြေကို အခြားနည်းဖြင့် အသုံးပြုရန် လျှောက်ထားချက်နှင့်စပ်လျဉ်း၍ -
- (က) ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် လယ်မြေကို အခြားနည်းဖြင့် အသုံးပြုနိုင်ရေးအတွက် တိုင်း ဒေသကြီး သို့မဟုတ် ပြည်နယ်လယ်ယာမြေ စီမံခန့်ခွဲမှုအဖွဲ့၏ စိစစ်ထောက်ခံချက်ဖြင့် ခွင့်ပြုနိုင်သည်။
 - (ခ) သက်ဆိုင်ရာတိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်အစိုးရအဖွဲ့သည် လယ်မြေမှတစ်ပါး လယ်ယာမြေကို အခြားနည်းဖြင့် အသုံးပြုနိုင်ရေးအတွက် တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ် လယ်ယာမြေစီမံခန့်ခွဲမှု အဖွဲ့၏ စိစစ်ထောက်ခံချက်ဖြင့် ခွင့်ပြုနိုင်သည်။

၃၁။ ပုဒ်မ ၃၀ အရ အခြားနည်းအသုံးပြုရန် ခွင့်ပြုချက်ရရှိပြီးနောက် ခွင့်ပြုသည့်နေ့ရက်မှ ခြောက်လအတွင်း လယ်ယာမြေကို သတ်မှတ်သည့်နည်းလမ်းအတိုင်း စတင်အသုံးမပြုလျှင်သော်လည်းကောင်း၊ သတ်မှတ်ကာလ အတွင်း လုပ်ငန်းပြီးစီးခြင်း မရှိလျှင်သော်လည်းကောင်း ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့သည် ယင်းလယ်ယာမြေကို ပြန်လည်သိမ်းယူနိုင်သည်။

**အခန်း (၁၁)
လယ်ယာမြေကို စီမံခန့်ခွဲခြင်း**

၃၂။ နိုင်ငံတော်အကျိုးဖြစ်ထွန်းစေမည့် စီမံကိန်းများအတွက် လယ်ယာမြေကို သိမ်းယူရာတွင် အနည်းဆုံး လိုအပ်သောပမာဏကိုသာ သိမ်းယူရမည်။ စီမံကိန်းအား သတ်မှတ်ကာလအတွင်း အမြန်ဆုံးပြီးစီးစေရန် အကောင်အထည်ဖော်ရမည်ဖြစ်ပြီး စီမံကိန်းများ ဆောင်ရွက်ခြင်းမပြုတော့ပါက မူလလယ်ယာမြေလုပ်ပိုင်ခွင့်ရရှိထားသော ပုဂ္ဂိုလ်၊ အဖွဲ့အစည်းထံ ပြန်လည်ပေးအပ်ရမည်။

၃၃။ ပြည်ထောင်စုအစိုးရအဖွဲ့ကသော်လည်းကောင်း၊ ဤကိစ္စအလို့ငှာ ပြည်ထောင်စုအစိုးရအဖွဲ့က ခန့်အပ်သော အာဏာပိုင်ကသော်လည်းကောင်း အခြားနည်း အမိန့်ဆင့်ဆိုသည်မှတစ်ပါး ကျွဲ၊ နွား၊ စားကျက်များနှင့် ရွာဘုံမြေများကို မပျက်စီးစေဘဲ ဆက်လက်ထားရှိရမည်။

၃၄။ မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများ စီမံခန့်ခွဲရေးဗဟိုကော်မတီက စိုက်ပျိုးရေးနှင့် မွေးမြူရေးလုပ်ငန်းများအတွက် လုပ်ပိုင်ခွင့် သို့မဟုတ် အသုံးပြုခွင့်ပေးထားသည့် မြေလွတ်၊ မြေလပ်နှင့် မြေရိုင်းများနှင့်စပ်လျဉ်း၍ သီးနှံစိုက်ပျိုးထုတ်လုပ်မှု တည်ငြိမ်သည့်အခါ လယ်ယာမြေအဖြစ် ပြောင်းလဲသတ်မှတ်ပြီး ဤဥပဒေတွင် အကျုံးဝင်စေရမည်။

**အခန်း (၁၂)
ပြစ်မှုနှင့် ပြစ်ဒဏ်များ**

၃၅။ မည်သည့်လယ်ယာမြေ လုပ်ပိုင်ခွင့်ရရှိသူမဆို ပုဒ်မ ၁၉ အရ ချမှတ်သောအမိန့်ကိုဖြစ်စေ၊ ဤဥပဒေအရ လယ်ယာမြေလုပ်ပိုင်ခွင့် အငြင်းပွားမှုတွင် ချမှတ်သော အမိန့် သို့မဟုတ် ဆုံးဖြတ်ချက်ကိုဖြစ်စေ လိုက်နာရန် ပျက်ကွက်ကြောင်း ပြစ်မှုထင်ရှားစီရင်ခြင်းခံရလျှင် ထိုသူကို အနည်းဆုံး ခြောက်လမှ အများဆုံးနှစ်နှစ်အထိ ထောင်ဒဏ်ချမှတ်ရမည့်ပြင် အနည်းဆုံး ကျပ်သုံးသိန်းမှ အများဆုံး ကျပ်ငါးသိန်းအထိ ငွေဒဏ်ချမှတ်နိုင်သည်။

၃၆။ ပုဒ်မ ၁၉ အရ ချမှတ်သောအမိန့်ကို လိုက်နာရန်ပျက်ကွက်ကြောင်း ပြစ်မှုထင်ရှားစီရင်ခြင်းခံရသူသည် ယခင်က အလားတူပြစ်မှုဖြင့် ပြစ်မှုထင်ရှားစီရင်ခြင်းခံခဲ့ရလျှင် ထပ်မံကျူးလွန်သောပြစ်မှုအတွက် ပုဒ်မ ၃၅ ပါ အများဆုံး ထောင်ဒဏ် ချမှတ်ခြင်းခံရမည်။

၃၇။ မည်သည့်လယ်ယာမြေ လုပ်ပိုင်ခွင့်ရရှိသူမဆို ပုဒ်မ ၁၄ ပါ တားမြစ်ချက်ကို ဖောက်ဖျက်ကျူးလွန်ကြောင်း ပြစ်မှုထင်ရှားစီရင်ခြင်းခံရလျှင် ထိုသူကို အနည်းဆုံးတစ်နှစ်မှ အများဆုံးသုံးနှစ်အထိ ထောင်ဒဏ်ချမှတ်ရမည့်ပြင် ကျပ် ၁၀ သိန်းအောက် မနည်းသည့် ငွေဒဏ်ကိုလည်း ချမှတ်ရမည်။ ထို့ပြင် ပြစ်မှုနှင့်သက်ဆိုင်သော ငွေနှင့် ပစ္စည်းများကို ပြည်သူ့ဘဏ္ဍာအဖြစ် သိမ်းဆည်းရမည်။

အခန်း (၁၃)
အထွေထွေ

၃၈။ တောင်သူလယ်သမားများ၏ လူမှုစီးပွားရေးဘဝ မြင့်မားတိုးတက်စေရေးကို ရှေးရှု၍ ပြဋ္ဌာန်းထားသော ဥပဒေများအတိုင်း တောင်သူလယ်သမားအဖွဲ့အစည်းကို ဖွဲ့စည်းနိုင်သည်။

၃၉။ ဤဥပဒေအရ ဖွဲ့စည်းသည့် လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့အဆင့်ဆင့်တွင် ပါဝင်သော အဖွဲ့ဝင်များသည် ပြစ်မှု ဆိုင်ရာဥပဒေပုဒ်မ ၂၁ ပါ အဓိပ္ပာယ်အရ ပြည်သူ့ဝန်ထမ်းဖြစ်သည်ဟု မှတ်ယူရမည်။

၄၀။ ဤဥပဒေနှင့်အညီဖြစ်စေ၊ ဤဥပဒေအရပြုသည့် နည်းဥပဒေများနှင့်အညီဖြစ်စေ သဘောရိုးဖြင့် ဆောင်ရွက် သည့် ကိစ္စတစ်ရပ်ရပ်အတွက် လယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့အဆင့်ရှိ အဖွဲ့ဝင်များကို မည်သည့်တရားရုံးတွင်မျှ တရားစွဲဆိုခွင့် မရှိစေရ။

၄၁။ ပုဒ်မ ၃၇ အရ တရားစွဲဆိုသောပြစ်မှုကို ရဲအရေးယူပိုင်ခွင့်ရှိသောပြစ်မှုအဖြစ် သတ်မှတ်သည်။

၄၂။ ဤဥပဒေပါ ပြဋ္ဌာန်းချက်များကို အကောင်အထည်ဖော်ဆောင်ရွက်ရာတွင်-
(က) ဝန်ကြီးဌာနသည် လိုအပ်ပါက နည်းဥပဒေများ၊ စည်းမျဉ်းနှင့်စည်းကမ်းများကို ပြည်ထောင်စုအစိုးရအဖွဲ့ ၏ သဘောတူညီချက်ဖြင့် ထုတ်ပြန်နိုင်သည်။
(ခ) ဗဟိုလယ်ယာမြေစီမံခန့်ခွဲမှုအဖွဲ့နှင့် ဦးစီးဌာနတို့သည် လိုအပ်ပါက အမိန့်ကြော်ငြာစာ၊ အမိန့်၊ ညွှန်ကြားချက်နှင့် လုပ်ထုံးလုပ်နည်းများကို ထုတ်ပြန်နိုင်သည်။

၄၃။ အောက်ပါဥပဒေများကို ဤဥပဒေဖြင့် ရုပ်သိမ်းလိုက်သည်-
(က) ၁၉၅၃ ခုနှစ်၊ လယ်ယာမြေနိုင်ငံပိုင်ပြုလုပ်ရေးအက်ဥပဒေ၊
(ခ) ၁၉၆၃ ခုနှစ်၊ သီးစားချထားရေးဥပဒေ၊
(ဂ) ၁၉၆၃ ခုနှစ်၊ တောင်သူလယ်သမားအခွင့်အရေး ကာကွယ်သည့်ဥပဒေ။

ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် ဖွဲ့စည်းပုံအခြေခံဥပဒေအရ ကျွန်ုပ်လက်မှတ်ရေးထိုးသည်။

(ပုံ) သိန်းစိန်
နိုင်ငံတော်သမ္မတ
ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်