

## **Effects of Summer Paddy Cultivation on Economy of Local Farmers in Myaungmya Township, Ayeyarwady Region**

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### **Abstract**

Myaungmya is one of the townships in Ayeyarwady Region located in Deltaic area. Summer paddy is extensively cultivated as second crop in the cool dry period. Summer paddy cultivated area covers nearly 90 percent of the summer paddy cultivated area. Although most farmers cultivate summer paddy as a major crop, their cultivation practices differ from one farmer to another. Depending on cultivation practices, farmers are classed in to four groups: farmers of first group are the Rich who cultivate summer paddy intensively, they cultivate systematically and carefully. In second group, farmers cultivate summer paddy for the purpose of distributing seeds for local farmers, and farmers who cultivate paddy on self-help basis for household consumption are in the third group. Farmers of fourth group are poor and they do not cultivate paddy and rent the land to private company. Most farmers in the area cultivate high yield varieties to boost the yield with the intention of getting more income. Therefore, effects of summer paddy cultivation on economy differ in accordance with the cultivation practises. The objectives of the paper are to understand the reasons that cause different cultivation system, to explore different farming practices, to find out different rent returns from summer paddy cultivation and to forecast the future prospects of summer paddy cultivation in the area. To present the paper, primary data is mainly applied and mixed method is used.

**Key words:** Summer paddy, cultivation practice, varieties, input use, investment

### **I. Introduction**

Myanmar (formerly known as Burma) was the dominant rice exporting country in the world during the first half of this century, accounting for nearly three-fourths of the world rice exports (Young, K.B., 1998).

Rice is the most important food crop of Myanmar and it remains as a strategic sector in terms of its continuing significant contribution to Gross Domestic Product (GDP), income and employment generation. Myanmar is still an agriculture country and total population was 51.42 million in 2014. Total paddy cultivated area was 7.28 mil ha, total production 28.32 mil mt and average yield 3.9 ton per ha. Although set target yield is 5.1 ton per ha in Myanmar, actual productivity was distinctly lower than target yield (Agricultural Statistics, 2014).

Ayeyarwady Region is known as rice granary of Myanmar and Myaungmya Township is one of the townships in Ayeyarwady Region. Myaungmya Township possesses largest summer paddy cultivated area among the townships of Ayeyarwady Region. Summer paddy cultivated area occupied 90 percent of the total rain fed paddy cultivated area, yield per unit area of summer paddy is higher than that of monsoon paddy and risk is lesser than that of monsoon paddy.

Summer paddy gives high yield because the cultivation period free from untimely rain and it is cultivated in dry period with the help of irrigation. As the area is located in the deltaic area, there are numerous streams. These stream networks also support irrigated water for summer paddy cultivation.

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Four types of summer paddy cultivation are found in Myaungmya Township. Type of farming practiced by the Richs differs from that of the Poors. Input cost is high in cultivation of high yield varieties.

The objectives of the paper are to understand the reasons that cause different cultivation manners, to explore different farming practices, to find out different rent returns from summer paddy cultivation and to forecast the future prospects of summer paddy cultivation.

### Study area

Myaungmya Township is located in the south western part of Ayeyarwady Delta. Most of the area is flat alluvial plain which supports paddy cultivation. The main rivers are Panmawady, Myaungmya, Pyamalow, Ywe, Pinlegalay and Pathein (Ngawun) rivers that provide irrigation water for summer paddy cultivation.

### Data and methodology

In choosing the village tracts for case study among the 98 village tracts, 9 village tracts were selected as samples. Twenty farmers from each village tract were interviewed to get thorough understanding of summer paddy cultivation and choice for farmers depends on practises of paddy cultivation. Five farmers from each type of summer paddy cultivation are chosen to acquire primary data related to types of summer paddy cultivation; capital investment, selected quality seeds, and labouruse werecollected. Secondary data were also applied in preparation of the paper and they are obtained from departments concerned.

## II. Temporal and Spatial Variation in Summer Paddy Cultivation

As Myaungmyaoccupies a vast productive and fertile alluvial land, paddy is the most dominant cereal crop within the township.

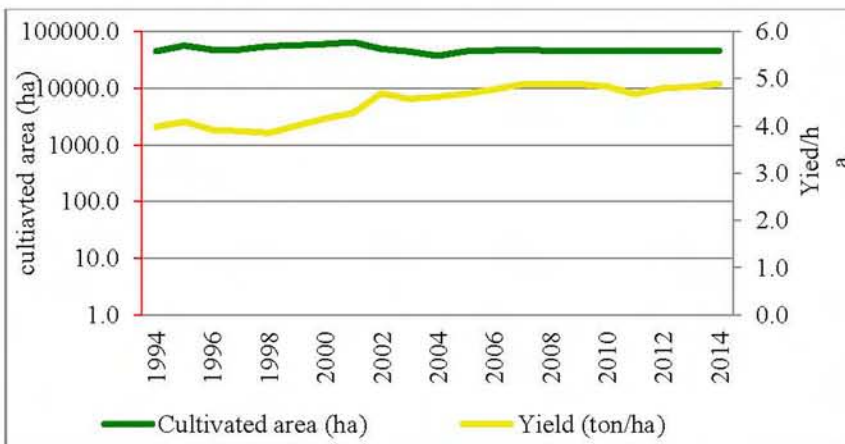


Figure 1. Temporal change of summer paddy cultivated area in Myaungmya Township

Source: Settlement and Land Records Department

Summer paddy was first introduced in 1993-94 and it is grown in area close to the sources of water. Summer paddy cultivated area is mainly found on the farmlands proximate to Myaungmya, Ywe, Panmawady and Pyamalow rivers and other streams from which water is pumped into the fields.

Owing to improved farming techniques, and better paddy strain, yield per hectare increased in the study period. Comparatively the yield per unit area of summer paddy is much higher than that of monsoon paddy due to receiving longer sunshine hours which enhances photosynthesis of the plants. Although summer paddy cultivated area fluctuated in the study period, yield per unit area increased gradually in Myaungmya Township (Figure 1). The large sown area of summer paddy is found near rivers and streams that can supply large amount of water to irrigate the farmlands.

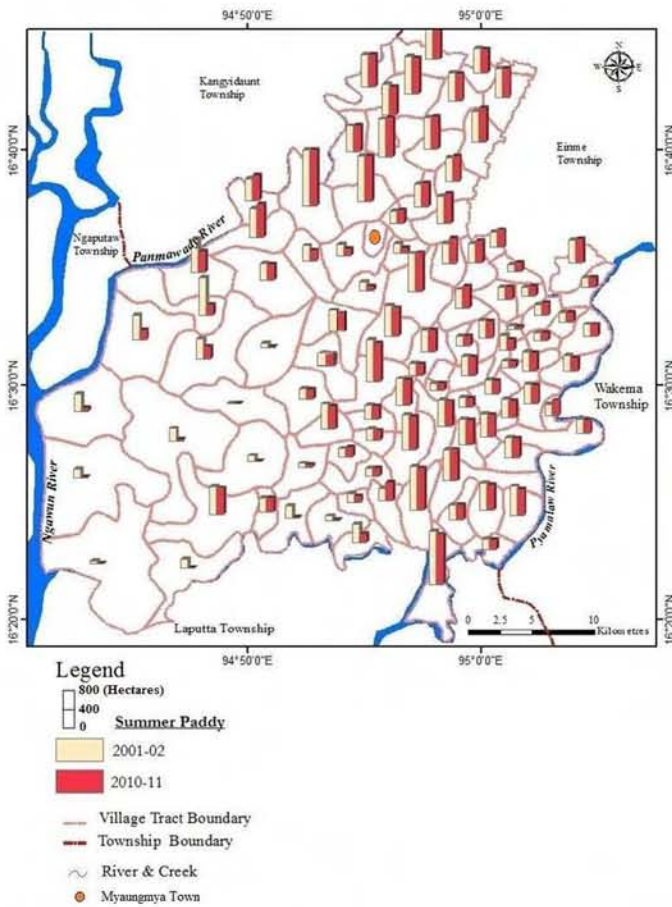


Figure 2. Spatial variation of summer paddy cultivated area in Myaungmya Township

Source: Settlement and Land Records Department

The village tracts with large sown area of summer paddy were Hpayarchaungahsugyi, Mwaytawshansu, Thazinkonegyi, Bamawthonegwa, Kantharkone, Kywechanpaykone, Lutaw and Kywetnwechaung village tracts. Irrigation water is available for these village tracts due to nearness to Myaungmya, Ywe, Panmawady and Pyamalaw rivers, Laputkular and Theinlar creeks and etc. Although summer paddy cultivated area fluctuated but yield per unit area slightly increased in Myaungmya Township (Figure 2).

**Summer paddy varieties**

Hybrid rice cultivation was started in 1974 for the purpose of increasing productivity per unit area to fulfill the local need as well as to boost amount of export rice (IRRI, 2009).



At present, new government has laid down the guide line to cultivate 100 acres of paddy for the production hybrid seeds in each region. Area occupied by high yield varieties is greater than that of special high yield varieties because the latter need more investment and some farmers cannot afford the cost of inputs (Figure 3).

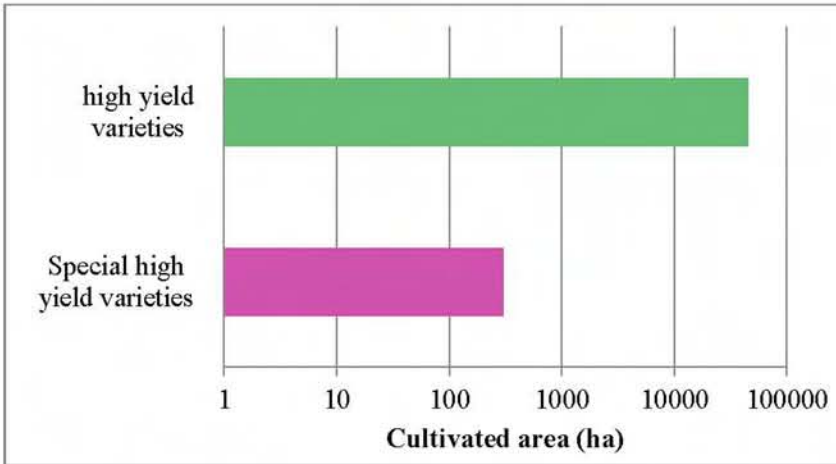


Figure 3. High yield varieties in Myaungmya Township  
Source: Settlement and Land Records Department

By 1988, high yield varieties were planted on half of the country’s rice lands, including 98 percent of the irrigated areas. IRRI in Myanmar produced more than 50 new paddy varieties including Shwe War Tun, Sin ThiRi, YaGyaw, Pa Le Thwe, ShweThwe, KyawZe, Shwe Thwe Tun, Yenet, Yar Saba after 1988. Nowadays, short-duration varieties (less than 120 days) are extensively cultivated.

In Myaungmya Township, special high yield varieties and high yield varieties are grown. Special high yield varieties are Palethwe, Vietnam and Belgium (Figure 4). High yield varieties are Theehtupyin, Sinthukha and other varieties such as Marlarhmwe, Theehtupyin, Japan Hnankar and Shwemyanmar (Figure 5). They are short lived and high yield varieties. Although Japan Hnankar's price is high and tastes good, some farmers do not cultivate it because of the existing soils. Japan Hnankar likes sandy meadow soils and dislikes loamy soils.

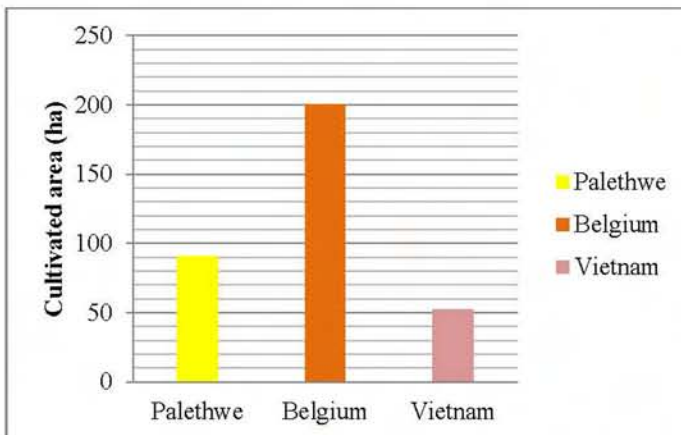


Figure 4. Special high yield paddy varieties in Myaungmya Township  
Source: Settlement and Land Records Department

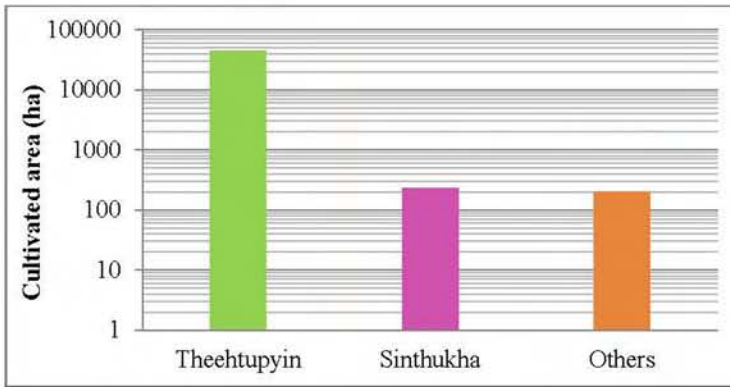


Figure 5. High yield paddy varieties in Myaungmya Township  
 Source: Settlement and Land Records Department

### III. Factor Affecting Summer Paddy Cultivation

Basic geographic factors support summer paddy cultivation in Myaungmya Township. On the other hand, farming methods, inputs and irrigation have significant influence on summer paddy productivity.

#### Physical factors

Physical factors such as relief, drainage, climate and soils directly or indirectly influencesummer paddy cultivation of any area.

Myaungmya Township is located in the southwestern part of Ayeyarwady Region and it lies between North latitudes 16°19' and 16°44' and also between East longitudes 94°40' and 95°05' (Figure 6 & Figure 7). It is located within the tropical zone near the equator and temperature and rainfall of the area are very suitable for summer paddy cultivation, if sufficient irrigation water in available.

The area of Myaungmya Township is 1,152.23 sq.km comprising 12 wards (urban) and 98 village tracts. The township is nearly compact in shape. Most of the boundaries are defined by rivers and creek. These creeks and streams support irrigation water for summer paddy cultivation.







































