

## ***Food Security among the Paddy Cultivators in Irrigated and Non Irrigated Areas: An Assessment and Policy Recommendation***

### ***Introduction***

Food security is defined as “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 2002). Currently, the issue of food security has become significantly important due to the series of current incidents particularly the 2008 global food shortages and food surged prices (van Braun, 2007) as well as the uncertainty in global economic climate. The poor people living in rural areas and engaged in agricultural activities are the most affected groups facing by food insecurity.

In Malaysia, paddy cultivators have been identified as one of the most vulnerable groups that can be affected by food insecurity (Malaysia, 1965) as well rubber tapper, fisherman, coconut growers and smallholder farmers. There are many factors contributed to the food insecurity faced by the paddy cultivators. This traditional activity has often associated with low productivity, low income, high incidence of poverty, out dated application in agricultural techniques and technologies and land ownership (Chamhuri, 1995 & Fadzim, 1992; Fatimah, 1996 ). Climatic variability such as drought, floods and threat of pests and diseases have also contributed to the levels of food security among the farmers. In order to overcome these problems, the government through its various agencies have implemented various strategies and programs to develop and modernized this sector. One of the major measures undertaken by the government is developing the large scales modern irrigation systems. Muda Irrigation Scheme was the first as well as the largest irrigation area that has been developed by the government. The completion of Muda Irrigation Scheme has allowed double cropping being practiced. Incentives and supports in the form of input subsidies, guarantee minimum price (GMP), price coupons and credits have also been introduced to improve the livelihoods of the farmers. Meanwhile, most of the farmers in non irrigated areas are not able to practice double cropping due to inadequate water supply. Thus, their income is only depending on one season and therefore they are more vulnerable to food insecurity compared to those in irrigated areas.

### ***Project team***

Mrs. Rospidah Ghazali (Project leader)  
Prof. Emeritus Chamhuri Siwar (Co-researcher)  
Prof. Dr. Pazim@Fadzim Othman (Co- researcher)  
En. Mohd Noor Faizul Md Saad (Co- researcher)  
En. Ahmad Zubir Ibrahim (PhD student)

## ***Prospects for Multifunctionality of Irrigated Paddy Cultivation in Malaysia: Developing Framework, Measurement and Recommendation***

### ***Introduction***

The term 'multifunctionality' refers to an agricultural activity that could have multiple functions/ outputs besides providing food and fibers and, therefore, may contribute to several objectives at once (Matsuno et al., 2006). Other functions include income maintaining and ensuring the viability of rural community and environmental protection (e.g. land use conservation, flood mitigation, preservation of biodiversity and landscape). However, there are arguments among the opponents that multifunctionality is being used to justify government support to agriculture, which has come under pressure in international trade negotiations (Potter & Barney, 2002).

In Malaysia, rice is a strategic crop and highly protected by the government. An approximately 40% of the paddy growers are depending on this crop as the main source of income (Malaysia, 1996). In addition, the paddy growers have been predominantly identified as the poorest group and therefore numerous incentives have been introduced to support this group. Over the decades, the paddy growers have been utilizing their farms to grow fruit and vegetable crops such as banana, papaya, mangoes, water spinach (*kangkung*), pumpkin and others for their daily consumption and also marketed them to obtain an additional income. In the same time, paddy fields have also constituted valuable resources and home for biodiversity which have also fulfil the food security of the farmers. For example, wild plants (e.g. *pucuk paku*, *pucuk putat*, *pucuk gajus* and *pucuk kaduk*) and shells and fishes (e.g. *siput*, *keli*, *sepat*, *haruan* and *puyu*) have been consuming by the paddy growers and their families. In a few cases, rice growers have earned income by selling these resources. Meanwhile, the major function of irrigation system is to provide water supply for paddy farming. However, it has also contributed as flood mitigation and water retention functions especially during the heavy rainfall season. Furthermore, rural communities in paddy areas are practising a unique life system particularly in cultural and traditional beliefs which is inherited over the generations. These cultural values have been highly promoted and become an important product under the agro tourism activities.

### ***Objectives***

1. To investigate the prospects for multifunctionality of irrigated paddy cultivation in Malaysia;
2. To develop a framework of multifunctionality of the irrigated paddy cultivation;
3. To measure the four major multiple functions of the irrigated paddy cultivation namely food security functions, natural resources functions, economic functions and socio-cultural functions; and
4. To recommend a management practise for sustaining and enhancing the positive multifunctionality of irrigated rice ecosystem in Malaysia.

### ***Project team***

Mrs. Rospidah Ghazali (Project leader)  
Prof. Emeritus Chamhuri Siwar (Co-researcher)  
Dr. Abdullah Samad (Co-researcher)  
Mr. Jasni Yaakub (Co-researcher)  
Mr. Nazren Leman (Co-researcher)

## **FOOD SECURITY ASSESSMENT FOR THE FLOOD-AFFECTED VICTIMS: VULNERABILITY, COPING STRATEGY AND LIVELIHOOD**

### *Introduction*

The States of Kedah is always affected by extreme flood events especially during the monsoon seasons. The underlying factors contributed to the frequency of flood occurrences are the natural physical factors (e.g. most of the flood-affected areas are located at lowlands and flood-prone zones); human-induced factors such as inappropriate land use planning and developments that caused deforestation, high in urbanisation rate, population expansion and poor drainage system; and climatic factors (e.g. heavy rainfall, global warming and climate change). Thousands of people have to be evacuated and millions of ringgit has to be allocated for foods, clothes, health treatment and others welfare over the period of flood events. In the mean time, the government needs to reconstruct public infrastructures such as roads, health facilities, schools and agricultural facilities (e.g. irrigation and drainage systems) due to floods damaged. When the water dry off, flood-affected victims return to their homes to continue their daily life. However, most of them face difficulties to resume their life due to floods damaged. Furthermore, they are lack of capital or assets to be utilized.

The magnitude of flood disaster is not determined by floodwater alone but also by the pattern of vulnerability in which people live. Rural communities which engaged in agricultural based activities (e.g. rice growers and agricultural smallholders) are vulnerable to flood events. They are often already vulnerable to multi-dimensional stresses such as poverty, highly depended on single source of income, fluctuation in commodity prices, low productivity, the absence of savings, lack of access to credit and financial assistance for crops production and high number of household members. Floods increase their vulnerability to food insecurity because they have not enough money to purchase foods. In the extreme situation, foods shortages might be occurred as the assistance cannot be reached at the affected areas due to collapse of transportation system. Children, pregnancy women and elderly groups are most affected during this situation and consequently contribute to inappropriate growth attainment such as stunting, underweight or other nutritional deficiencies (e.g. vitamin A, iron, iodine) especially among young children as they are very susceptible to unsatisfactory food intakes.

The impacts of floods to the livelihood of the poor people can be discussed into three major components namely economic impacts, social impacts and physical impacts. Among the economic impacts faced by poor farmers are income loses due to damages in crops and farming equipments as well as other properties (houses, electrical equipments and vehicles). Flood occurrences also affected the psychological of the victims such as trauma and distress. Meanwhile, flood victims are also vulnerable to sickness such as diarrhea, typhoid and other water boned diseases. Floods also caused infrastructures damaged and the costs for reconstructing are very high

### *Objective*

1. To determine vulnerability factors that affect the food security achievement of the flood victims;
2. To study the coping strategies undertake by flood-affected victims in achieving their food security;
3. To measure the impacts of floods to the livelihoods of the victims; and
4. To recommend policy improvements related to food security achievement of the flood-affected victims.

#### *Project team*

Mrs. Rospidah Ghazali (Project leader)

Prof. Dr. Pazim@Fadzim Othman (Co- researcher)

Mr. Ahmad Zubir Ibrahim (Co-researcher)

### **PENGUNAAN INDIKATOR UNTUK PENILAIAN KELESTARIAN SISTEM PENGELUARAN PADI AIR HUJAN DI KEDAH**

#### *Pengenalan*

Padi atau beras merupakan makanan ruji rakyat Malaysia dan mempunyai kepentingan strategik dalam agenda pembangunan negara (Malaysia, 1998). Justeru itu, kerajaan telah memberi perlindungan tinggi pada setiap rantai sektor ini bermula di peringkat ladang, pemprosesan, pemborong, peruncit hingga kepada pengguna. Rancangan Malaysia Ke Sembilan (RMK 9 2006-2010) meletakkan sasaran pencapaian tahap sara diri bagi produk beras sebanyak 90%, dan hanya 10% sahaja keperluan beras negara diperolehi menerusi import. Sebanyak 7,776 ribu tan padi dikeluarkan daripada lapan jelapang padi utama negara, dan 550 ribu tan dikeluarkan di luar kawasan jelapang (Malaysia, 2005). Pengeluaran padi di luar jelapang yang bergantung sepenuhnya kepada sumber bekalan air hujan dan aktiviti penanaman padi hanya dapat dilakukan sekali setahun berbanding kawasan jelapang di mana padi dapat ditanam dua kali setahun. Dalam pada itu, pengeluaran padi menggunakan sistem air hujan berhadapan masalah seperti hasil pengeluaran rendah, serangan penyakit, masalah bekalan air berterusan di samping ketiadaan pengurusan berpusat yang membangunkan aktiviti pengeluaran secara bersepadu dan terurus.

Di Malaysia, pengeluaran padi menggunakan sistem air hujan merangkumi 24 peratus daripada keseluruhan kawasan pengeluaran padi negara (Malaysia, 1996). Pengeluaran padi air hujan dapat ditakrifkan sebagai sistem pengeluaran padi yang tidak menggunakan sistem pengairan dan perparitan moden dan bergantung sepenuhnya kepada air hujan sebagai bekalan sumber air. Ianya juga merangkumi padi bukit atau padi huma atau padi yang ditanam di kawasan tanah rendah.

Oleh yang demikian kajian akan merungkai persoalan-persoalan berikut;

- i) Sejauhmana kepentingan peranan aktiviti sistem pengeluaran padi air hujan kepada pembangunan sektor padi negara?
- ii) Apakah halangan-halangan sosioekonomi dan biofizikal yang dihadapi oleh sistem pengeluaran padi air hujan?
- iii) Apakah indikator-indikator yang dapat digunakan untuk menilai kelestarian sistem pengeluaran padi air hujan di Malaysia?
- iv) Apakah model intervensi yang perlu dibangunkan agar sistem pengeluaran padi air hujan dapat terus lestari dan memberi sumbangan signifikan kepada kelestarian pembangunan sektor padi?

#### *Objektif*

- (a) Mengkaji halangan-halangan sosioekonomi dan biofizikal yang dihadapi oleh sistem pengeluaran padi air hujan;
- (b) Menilai kepentingan dan kelestarian sistem pengeluaran padi air hujan berdasarkan indikator indikator sosio-ekonomi dan biofizikal yang dibangunkan;
- (c) Mencadangkan bentuk-bentuk intervensi yang boleh memperbaiki sistem pengeluaran padi air hujan.