

Volume 26
Number 3
December
2009

In this issue:

- 1 **Article 1** Food Production and the Effects of Climate Change in Viet Nam
By Nguyen Cong Vinh
- 3 **Message from the Director**
- 6 **Article 2** The Implementation and Impacts of *Desa Mapan* (Food Self-Sufficiency Village) Programme in Central-South Timor and Ciamis Regencies, Indonesia
By Wahyuning K. Sejati, Supriyati and I Wayan Rusastra
- 11 **News & Activities**

Article 1

Food Production and the Effects of Climate Change in Viet Nam

By Nguyen Cong Vinh*

*Soil and Fertilizer Institute, Hanoi, Viet Nam, Email: vinhsfri@gmail.com; ncvinh_nisf2003@yahoo.com.

Introduction

The Food and Agriculture Organization (FAO) defines food security as a "situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life". Viet Nam in Southeast Asia is an agricultural country with more than 86 million people (2008), living in an area of 32.924 million ha. Agricultural production plays an important role in national economic development and food security and contributes 20.3 per cent to the national economy. Changing policies and the land law after 1980 contributed to these gains. From the self consumption and self-supply economic system, since 1980, Vietnamese Government implemented new policies and strategies to develop national economic. This 'new re-thinking' policy was issued to move from 'the self consumption and self supply economy' into 'marketing economic rule'. Food production was prioritized with rice land increasing from 7.3 million ha in 1995 to 8.4 million ha in 2008.

Viet Nam imported rice in the early 1980s but become the second largest rice exporting country, after Thailand. Food production progressed greatly with production of 6.1 million tons in 1955, increasing to 14.4 million tons in 1980 and 43.3 million tons in 2008. However, agriculture and food production in Viet Nam faces big problems due to climate change. Climate change is threatening human life. Climate change affects agriculture and food production in complex ways. It affects food production directly through changes in agro-ecological conditions and indirectly by affecting growth and distribution of incomes, and thus demand for agricultural produce. Ranked as one of the top 5 countries in the world impacted by climate change by UNDP, Viet Nam was chosen for this study on climate change and human development.

This article is to review the current food production and challenges under climate change in Viet Nam.

Population as a pressure for food production

Viet Nam is a narrow land with high population density. The population has been increasing from 72 million people in 1995 to 83.1 million in 2005 and 86.2 million people in 2008 (Statistic year book, 2008). Viet Nam has a high population density of 260 people/km². The Red river delta has the highest density compared with



other regions in the country, approximately 20 million people with a density of 933 people/km². Population in rural areas consists of more than 72 per cent of total population throughout all regions, except the southeast region where the agricultural population consists of 42 per cent of total population. The southeast region has the second highest density with 543 people/km², after Red river delta. This region includes Binh Duong, Dong Nai, Ba Ria - Vung Tau provinces and Ho Chi Minh City which have changed from agricultural provinces to industrial provinces.

The mountainous areas have less people than in the delta regions. Lowest density is in the western highlands (Dak Lack, Gia Lai, Kon Tum, Dak Nong and Lam Dong provinces) with a density of 92 people/km².

Increasing population demands more food supply. By forecasting in the few next decades, the population of Viet Nam will increase annually with a rate of 1-1.2 per cent, reaching 100 million in 2020 and 120 million people in 2030. Average grain food production is projected to be 470 kg/capita/year in 2010 and 390 kg in 2020. The total food requirement will reach 47 million tons in 2010; 50.3 million tons in 2015; 53.2 million tons in 2020; and 58.3 million tons in 2030. Of this, rice required will be 31.1 million tons; 32.1 million tons; 35.2 million tons and 37.3 million tons, respectively (Vu Nang Dung, Hoang Tuan Hiep, 2009)

Agricultural and food production

Food production

The total area of Viet Nam is 32,924.1 km² of which 9.4 billion ha (28.43 per cent) is agricultural land. In agricultural lands, the annual crops consist of 19 per cent, three times larger than the perennial crops. The annual crops include rice, maize, sweet potato, peanut, soybean and vegetables cultivated on flat lands in the delta. On upland soils, annual crops include maize, cassava and some vegetables. Largest agricultural land is distributed in Cuu Long river

delta followed by the northern and southern central coasts and middle and northern mountain deltas and finally the western highlands. The most rice cultivation, in both area and production, is in Cuu Long river delta and the second in Red river delta.

Land for agricultural production has been increasing over time. Table 1 shows that land use increased in the agricultural sector over the last 53 years. Total cultivated lands were 4.7 million ha in 1955, increased to 7.1 million ha in 1990, 8.4 million ha in 2005 and 8.5 million ha in 2008. Food production is increasing from 4.7 million ha in 1955 to 7.1 million ha in 1990 and 7.4 million ha in 2008. The total food production is 6.1 million tons in 1955; 21.5 million tons in 1990 and 39.6 million tons in 2008. The average food production was 430.3 kg/capita/year during 1996-2002, increasing to 540.5 kg/capita/year (by 1.95 per cent) during 2002-2006, and 503 kg/capita in 2008.

During 1976-1986, food production increased annually by 3 per cent, with 18.4 million tons in 1986, but 1987 it went down to 17.6 million tons. Average food production reduced from 301 kg/capita to 282 kg/capita. Due to better weather conditions and changing management policies, agricultural production progressed better. Food income was obtained by trade of 19.6 million tons in 1988 and 21.4 million tons in 1989. In GDP, agricultural products contributed 50 per cent (1988), 2 times higher than from industrial products, while population pressure is increasing resulting in a decrease of cultivated land/capita. It was 0.19 ha/capita in 1955, down to an average of 0.12 ha/capita during the '80s, and 0.10 ha/capita in 2008 (Table 1).

By forecasting over the next few decades, the population of Viet Nam will increase at an average annual rate of 1-1.2 per cent, reaching 100 million people by 2020 and 120 million people in 2030. Grain food requirement is estimated at 470 kg/capita/year by 2010 and 390 kg by 2020. National

Table 1: Land use for agricultural production in Viet Nam for the last 53 years

Year	Cultivated area (M. ha)	Average area (ha/capita)	Food production (M. tons)	People population (M. people)	Food income (kg/capita)	Rice yield (ton/ha)
1955	4.7	0.19	6.1	25.1	244	1.42
1975	5.6	0.12	11.6	47.6	244	2.14
1980	7.0	0.13	14.4	53.7	268	2.09
1985	6.8	0.11	18.2	59.7	305	2.78
1990	7.1	0.11	21.5	65.7	325	3.21
1995	7.3	0.11	26.1	72.0	363	3.69
2000	8.4	0.10	34.5	77.6	444	4.24
2005	8.4	0.11	39.6	83.1	476	4.48
2008	8.5	0.10	43.4	86.2	503	5.22

Source: GOS, 2009.

Greetings from Bogor!

This edition of Palawija News comes at an historic time in the process of global climate change talks. From 7-18 December 2009 thousands will gather in Copenhagen, Denmark, trying yet again to collectively agree on ambitious targets from rich nations as well as commitments from developing nations to reduce greenhouse gas (GHG) emissions. Will a new climate treaty be ready before the expiry of the current Kyoto Protocol which comes to an end in 2012? We'll just have to wait and see.

It is not coincidental that in this edition of Palawija News one of our articles focuses on climate change. In particular, the research looks at the affect a changing climate is having on rice production in Viet Nam. The country achieved remarkable success in increasing production of rice since the early 80s. However, the agriculture sector in general, and rice production specifically, is facing challenges as a result of climate change, including impacts on growth and distribution of farmer incomes, and thus demand for agricultural produce.

Moving from climate change to food security, a second article in this edition deals with a food self-sufficiency village programme called *Mapan* implemented in two Indonesian villages with distinct agro-ecosystems.

One village is located in a dry land but dry agro-ecosystem (Central South Timor regency in the eastern part of the country) while the other is in a dry land with a fairly wet climate (Ciamis regency in the west). Factors examined were those considered constraints to accelerating the programme's

achievement. It is interesting to note the impact of the inclusive, bottom up planning process used to develop an action plan that focused on development of a food security system under two distinct agro-ecosystems.

Please enjoy the other articles Palawija News has to offer this Quarter as well.

As mentioned in last Quarter's Palawija News, CAPSA is making some sweeping changes. One of the first steps being taken is to hold a two-day workshop entitled "Developing an Inclusive Strategic Plan for CAPSA" which will be held in Bogor 7-8 December. The workshop will be followed immediately by a one-day meeting of the members of CAPSA's Technical Committee. It is expected the strategic plan generated from these two events will provide the roadmap for CAPSA's activities in the future.

I also want to introduce CAPSA's new Programme Leader R&D, Dr. Edi Basuno, who is on part-time assignment to the Centre from his Bogor-based institute ICASEPS. Dr. Basuno is assisting CAPSA in, among other activities, developing a matrix of national agricultural research centres in the Asia-Pacific region working on issues related to climate change and adaptation.

Finally, good luck to those participating in the Conference of Parties in Copenhagen. The world is watching...and waiting.

LeRoy Hollenbeck
Director

reserves are at 1.3 million tons/year from now through 2010, 1.5 million tons from 2010-2015, and 2-2.5 million tons in 2020. This means the food requirement of Viet Nam is estimated at 47 million tons in 2010, 50.3 million tons in 2015, 53.2 million tons in 2020 and 58.3 million tons in 2030. The main cereal crops are rice (62-66 per cent) and maize (13-17 per cent) (Vu Nang Dung, Hoang Tuan Hiep, 2009).

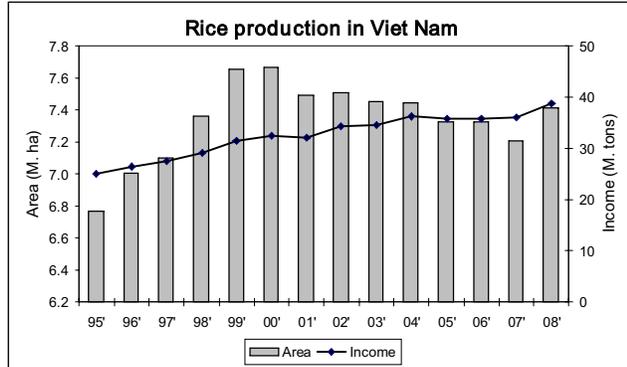
Rice production

Rice cultivation is a long standing and traditional product of Viet Nam playing the most important role in food production, agricultural and economical development.

Rice areas are distributed throughout the whole country. Rice production contributed about 37 per cent of total agricultural income and 26 per cent of exported agricultural products during the period 2000-2004.

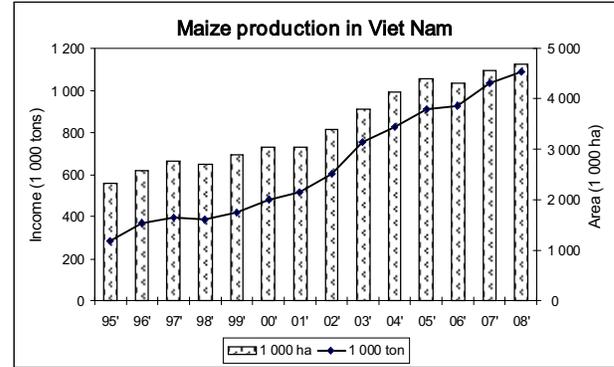
In the northern part, rice is mainly cultivated in two crops per year (spring rice and summer rice). In central and southern parts, rice can be grown one more season (three crops per year). Red river delta and Cuu Long river delta are the main rice regions, where rice covers 2/3 of cultivated areas and produce about 70 per cent of total rice production in the country.

Figure 1. Rice production (a) and Maize production (b) in Viet Nam



a

Source: GSO, 2009



b

In the Red river delta, rice is dominantly planted on the fluvial and alluvial soils. Rice -based cropping systems are rice-rice, rice-corn, rice-rice potato/sweet potato, rice-rice corn/bean, rice-rice-vegetables (tomato, cabbage). In Cuu Long river delta, rice-based cropping systems are rice-rice, rice-rice-rice. In addition, rice is also cultivated in a mixed farming system such as rice–fish or rice–shrimp.

Due to application of new technology in rice production such as new varieties, better soil management and important policies to develop agriculture (land use rights to farmers/households and reduced land tax for farmers), rice production in Viet Nam has been increasing yearly in both area and productivity. During the period 1990-1999, rice area was increased from 6 million ha to 7.66 million ha; production was increased by 7.2 per cent/year. During the period 2000-2007, rice area reduced frequently to 6.7 million ha from 7.4 million ha. However, rice production increased from 32.5 million tons (2000) to 35.9 million tons (2007).

In 2008, rice area increased to 7.4 million ha and production increased to 38.6 million tons (General statistic year book 2008). In 1989, for the first time Viet Nam exported rice totalling 1.4 million tons with an export value of US\$310 million. Afterward, food production has continuously increased. Exported rice amounted to 5.3 million tons in 2005 with an export return of US\$1.4 billion (N.D. Bich, <http://vietbao.vn/Kinh-te/Xuat-khau-gao-Tra-gia-cho-su-qua-da/30156413/87/>).

Maize production

Maize is the second most important food crop in Viet Nam, next to rice. It is the substitute staple in periods of rice shortage, especially for people in the rural areas and mountainous regions. Maize is also the primary source of feed for Viet Nam's poultry and livestock industry and is, therefore, an important source of income for many farmers.

Maize production has risen sharply since 1990, when only 431,800 ha were planted to maize, yielding an average of 1.6 t/ha for a total production of 671,000 tons. Since then, the government has strongly supported maize hybrid technology and the resultant hybrid maize varieties have been widely adopted by farmers. In addition, the livestock and poultry industry have grown, creating a need for more maize to use as feed. From 1990 to 1999, total maize production increased by 161 per cent. The total area planted to maize by 1990 was 6.47 million ha yielding an average of 1.5 t/ha; and 8.35 million ha and 2.53 t/ha in 1999. Then, a significant increase was obtained in 2008 where the total maize area planted reached 1.13 million ha with an average yield of 4t/ha from a total production of 4.35 million tons in whole country (Viet Nam Statistical Yearbook, 2009). This dramatic change made a positive economic contribution to many rural areas of Viet Nam.

Rapid economic growth and accelerated urbanization in the country are expected to create an even higher demand for maize. This trend will lead to an intensification of current maize production systems, with more land being devoted to maize cultivation, particularly in the marginal uplands. However, the increasing commercialization and intensification of maize production in these upland areas could have negative environmental consequences. Viet Nam's challenge is to provide more maize for an expanding market, while preserving the natural resource base and the environment through careful agricultural planning. Effective policy design and implementation must be based on comprehensive and accurate data on the current state of upland maize-based farming systems.

National poverty and reduction

Even though Viet Nam is a food export country, Vietnamese Government and Vietnamese Communist Party always set food security as a priority in making policies during the process of economic development. The

Tenth Congress of Vietnamese Communist Party agreed that Viet Nam must plan the area for growing rice in order to get stable rice production and obtain food security. The policies supporting food security include policies related to rice growing such as land policy, investments and trade policy. In terms of land policy, in 1993 the land law was issued allowing rice farmers to have more autonomy in making production decisions. However, in order to obtain food security, the Government issued Decisive No. 68/2001/ND-CP on 01 October 2001 that attempted to control paddy land by limiting farmers to convert their paddy land to other crops or other uses. In 2006, Vietnamese Assembly issued Decisive No. 57/2006/NQ-QH11 that strictly controls converting paddy land into other uses. Moreover, farmers are also exempted from agricultural land tax. On 18 April 2008, the Prime Minister signed Decisive 391/2008/QĐ-TTg to check the implementation of agricultural land use plan, and rice land in particular. The Vietnamese Government has also supported food security by providing public investments in agriculture, especially in building irrigation systems for areas growing rice. About 80 per cent of irrigation investments was allocated to rice production. Moreover, on 22 October 2004, the Prime Minister signed the Decisive No. 184/2004/QĐ-TTg, to improve the irrigation systems connecting farmer land and the rural transportation system (Nguyen Van Ngai, n.d.)

Table 2. Rural poverty situation in Viet Nam (1999)

Agro-ecology	Population (1 000)	Poverty (%)	Number of Poor (1 000)	Share local poor (%)
Northern uplands	9 268	19.81	832	0.22
Northern lowlands	13 516	8.7	1 169	0.17
Central highland & Central coastal uplands	5 714	23.3	1 332	0.16
Central highland & Central coastal lowlands	10 866	19.7	2 140	0.25
Southeast-Mekong delta uplands	5 743	7.4	427	0.05
Southeast-Mekong & delta lowlands	13 409	11.7	1 574	0.19

Source: Computed using poverty data for 1999 in Population and Socio economic Statistics Data 1975-2001, General Statistics Office, 2002.

Agriculture is the most important source of income in the country, although the contribution of rice and maize to farm income varied widely among agro-ecologies, ranging from 0.5 per cent to 32.7 per cent of the total farm income, and making up less than 40 per cent of total farm income. The sale of maize made a higher contribution to farm income in the upland agro-ecologies compared to that of the lowland agro-ecologies. Upland maize farmers, however, have less non-farm income than farmers in the lowlands. Approximately 16 per cent of the country's total population is very poor, with the highest levels of poverty (19.7-23.3

per cent) recorded in 1999 in the northern upland and in the upland and lowland areas of the central highlands central coast (Table 2).

However, poverty remains a problem that needs to be addressed in the future. The poverty rate in country has been reduced from 18.1 per cent in 2004 to 15.5 per cent in 2006 and 14.8 per cent in 2007. In the mountainous areas, poverty remains high at 38.1 per cent in northern west region and 25.8 per cent in northern central coast by 2007 (Statistic year book 2007).

Food crop production as affected by climate change

Agro-forestry and aquaculture production have been facing difficulties because of the greenhouse gas effect of raising air temperatures, thawing ice, rising sea water levels, harmful rains, windstorms and floods. Generally, climate change is very complex but the trend is longer, more serious changes such as increasing air temperatures, very damaging cold temperatures and floods (INFOTERRA VN, XI, Ministry of Agriculture and Rural Development, 27/5/2008).

FAO stated that in 2008 climate change has contributed to increasing the number of those experiencing hunger, a total which now is estimated at 1 billion, 100 million higher than in 2007 due to the world financial crisis (To Van Tuong, 2009, <http://www.vncold.vn/Web/Content.aspx?distid=1915>).

Additionally, hundreds of thousands of hectares of land are being seriously degraded. Partial desertification in Viet Nam occurred on 7.85 million ha, distributed on the western highland plateau, western north and Long Xuyen quadrangular (Quang Thuan, 2004). Economic loss was estimated at US\$ 125 billion per year (Khong Loan, <http://www.tuoitre.com.vn/Tianyon/PrintView.aspx?ArticleID=319151&ChannelD=2>).

Flooding usually happens from May-June and September-October in the Northern part, and from June-July to October-November in Northern central part, October-December in Southern central part, June-December in Western highlands and July-December in Southern part.

In the Red river delta, two extremely strong floods happened in August 1945 and August 1971. They damaged many dams and dykes in many provinces. There was additional flooding in the years 1913, 1915, 1917, 1926, 1964, 1968, 1969, 1970, 1986, 1996 and 2002.

In the central area, large-scale flooding happened in the years 1964, 1980, 1983, 1990, 1996, 1998, 1999, 2001 and 2003 and in Cuu Long river delta, harmful flooding occurred

in the years 1961, 1966, 1978, 1984, 1991, 1994, 1996, 2000 and 2001.

Over the last 100 years, it is estimated that there were 493 typhoons and low tropical pressures in Viet Nam, which is an average of 4-5 times per year. In the last three decades, the number of typhoons was 55 in 1960-1969; 66 in 1970-1979 and 72 in 1980-1989. More recent typhoons occur with higher frequency and are more harmful.

Natural calamities cause serious losses every year. Crops were damaged throughout the country. As an example, 700,000 ha of rice land was damaged as well as 154,000 ha of lowland rainfed crops in Thanh Hoa; 4,500 thousand ha of rice and 210 thousand ha of lowland rainfed crops in Nghe An; and 37 thousand and 210 thousand ha, respectively in Ha Tinh province.

Dry and hot weathers cause soil degradation and desertification. The desertification occurred on 700 thousand ha of which most were on sandy soils. Salinity

and sulfate acidity occurs on 30,000 ha in Cuu Long river delta. The value of cultivated area with complete loss was more than 8,000 billion VN dong in 1996, 7,800 billion VN dong in 1997 and 3,500 billion VN dong in 2008. Flooded and lost areas of aquaculture were estimated at 100,000-135,000 ha (<http://www.hymetdata.gov.vn>).

Summary

Viet Nam is an agricultural country with narrow land and dense population. Agricultural production is being developed and achieved great progress in recent years contributing about 20-40 per cent to GDP. Food production is a priority so that cultivated rice lands increased from 7.3 million ha in 1995 to 8.5 million ha in 2008. Food production has increased from 6.1 million tons in 1955 to 43.0 million tons in 2008, an average of 224 and 503 kg/capita/year, respectively.

Population pressure and climate change present significant challenges and are a threat to the country's food security. ■

The Implementation and Impacts of *Desa Mapan* (Food Self-Sufficiency Village) Programme in Central-South Timor and Ciamis Regencies, Indonesia¹⁾

Wahyuning K. Sejati, Supriyati* and I Wayan Rusastra**

* Researchers at the Indonesian Center for Agriculture Socio Economic and Policy Studies (ICASEPS), Bogor.

** Researcher at ICASEPS and Programme Leader of R&D, CAPSA-ESCAP (2006-2008).

Introduction

The Food Self-Sufficiency (*Mapan*) Village Programme which was first introduced in 2006, is an Indonesian Government programme initiated by the Food Security Agency. This programme aimed to improve food security and nutrition of the local people so that they can live a sustainable, healthy and productive life. This programme is the result of the integration and consolidation of the existing people's empowerment models. The *Mapan* programme stressed more on people's participation and the improvement of village officials' capacity in development of: (a) food availability by optimizing the available resources in a sustainable way; (b) distribution and access to food; (c) food quality and security; (d) food consumption quality; and (e) food handling quality (Nainggolan, 2006). The bottom-up action plan was conducted based on the potency and decision

analyses to utilize natural resources in an efficient and sustainable way.

The development of a food security system is the main component in the Action Plan of *Mapan* Village which is conducted through the empowerment of natural and human resources. This programme required people to actively participate in achieving self-sufficiency in the provision, distribution and food consumption sub-systems by using the existing socio-economic institutions. The programme was implemented in four stages, namely: preparation, growth, development and self-sufficiency. Each stage has specific, inter-related activities. This *Mapan* Village programme is expected to become a trigger in achieving food security through cross-sectoral integration.

¹ Research collaboration between Food Security Agency of the Indonesian Ministry of Agriculture with CAPSA-ESCAP and ICASEPS, Bogor.

The focus of this programme was on food insecure areas and the recipients were poor households. Food insecurity mostly occurred in areas with limited natural resources. A diverse agro-ecosystem in one area affected a variety of implementation stages and impacts.

This article provides an illustration on the implementation and impacts of the programme in two villages that represent the dry land with dry climate agro-ecosystem (Central-South Timor regency) and dry land with wet climate (Ciamis regency). To accelerate the achievement of this programme, it was essential to examine factors that could be obstacles for programme implementation.

The implementation of *Mapan* Village action plan

The implementation of *Mapan* village action plan was influenced by the pre-conditions of programme preparation and an institutional role based on various sub-systems (provision, distribution and consumption). Each sub-system would interact with each other to produce the outputs according to the objective of the programme. The activities conducted during the preparation stage were, among others: (a) to determine the location and the recipients of the programme; (b) programme socialization; (c) institutional formation, development and identification; and (d) the empowerment of the programme recipient group. In the development stage, activities were focused on institutional reinforcement (social service, society and public service) as well as other activities related to food security. In the self-sufficiency stage, activities were focused on how to stimulate food self-sufficiency in households and at the regional level.

The precondition of action plan

Preconditions that could affect programme accomplishment were: (1) co-ordination with related stakeholders at the district level; (2) the selection of targeted village; (3) the recruitment of village escorting/extension staff; (4) the formation of affinity groups; and (5) programme socialization.

Co-ordination with stakeholders – The role of co-ordination among food security agencies or similar agencies at the district level strongly influenced *Mapan* programme implementation. Without transparent rights and liability (proven by the Regent Letter of Authority), the role of food security agency as programme co-ordinator could not be optimal. Through good co-ordination, programme from each institution could be directed to the targeted village. The monitoring result indicated that there was relatively good support from the inter-sectoral institutions in programme implementation in Ciamis, whereas in Central-South Timor (CST) it was moderate. The participation of inter-sectoral government institutions had a tremendous

impact in the acceleration of programme accomplishment.

The selection of targeted village – The focus of *Mapan* programme was food insecure villages, with the criteria as follows: 30 per cent of its population were poor families; the natural and human resources were not well developed; and the village servants and societies had high response on the improvement of food security. The identification result showed that in the cases of *Mapan* village in Ciamis versus Central-South Timor, the poverty level remained high (52 versus 66 per cent), educational level was relatively low (74 versus 81 per cent households) with only up to elementary school level. However, under normal circumstances, around 78-99 per cent of households had their food supplies. In Java, only 16 per cent of households worked as farmers because agriculture is still dependent on land and the availability of land was limited. Outside Java, most households worked as farmers due to abundant land limited work opportunities outside the agricultural sector. Different characteristics among regions created diverse impacts of the programme.

The recruitment of village escorting/extension staff – The competency of escorting/extension staff was crucial in providing programme motivation, escort, and supervision. This was due to limited human resources and the accessibility to programme recipients. The monitoring results showed that escorting services in two sample locations indicated good capacity with sufficient and responsive people participation. For areas with high food insecurity level (CST), the role of escorting staff was somewhat effective in the implementation of action plan. Whereas for areas with easier opportunity to earn a living (Ciamis), the effectiveness of escorting role was lower.

The formation of affinity group – The affinity group (group formed based on the spirit of togetherness and unity to carry out tasks) was formed based on the domicile with various activities of the group members. Within Ciamis regency, there were 10 autonomous affinity groups (AAG) formed in Ciparigi village and another 10 AAG in Sukamukti village. In CST regency, there were 9 AAGs formed in each village of Oebello and Tuafanu. Through group management and empowerment, it was easy for AAG to consolidate and develop a good kinship system. Each group has succeeded in creating group business scheme (GBS) for the self-sufficiency in food supply. The management was focused on the technical and managerial aspects to make poor households managed to take accurate decisions on their business activities. The results showed that the AAG was able to formulate group regulation, such as monthly meetings, group work, members' fee, members' main savings, members' loan and members' business.

Programme socialization – The clear and precise information on *Mapan* Programme will have an impact on the arrangement and implementation of action plans in the field. What happened in the field was that there were some government aid programmes (low interest credit allocation programme), perceived by the recipients as a grant. To avoid any deviation, it is essential to have the lawful agreement (such as Letter of Authority issued by the Regent), and if there was intentional deviation, it became group responsibility.

Institutional function

The accelerated food security development was affected by the efficiency of socio-economic institutions in empowering the natural and human resources through productive activities. The more fertile agro-ecosystem conditions and better distribution and consumption infrastructures of the products produced had affected the variety of options to do productive business. The larger obstruction on the economic environment was the more limited business options for the group. As an example, for the CST regency which is located in the dry and fallow areas, the agricultural business which was beneficial was seedling and cow / calf operation. The involvement of non-poor group members gave positive impact on the activities of the organization (Ciamis regency). The role of the micro/village financial institution (MVFI) as credit administrator for productive activities (off-farm, on-farm and non-farm) was implemented relatively well. However, limited budget and self-financing ability (for group) have caused sluggish growth of self-sufficiency in food security sector.

General impact of *Mapan* village programme

Mapan village programme was carried out inter-sectorally and not only on food security issues but also on the improvement of supporting facilities. In Ciamis regency the infrastructure renovation and development programme worked well, while in CST regency it was insufficient. This was due to better support for the inter-sectoral programme in Ciamis regency compared to CST. In addition, the one-year preparation was considered to be deficient, particularly for regions with unprepared physical and institutional supporting infrastructure.

The institutions developed during *Mapan* village programme were to strengthen horizontal connections but remained weak for the vertical ones. These institutions aimed to facilitate the distribution of assistance and monitoring. However, their role was inadequate in social capital. Institutional improvement was using structural means instead of cultural. Nonetheless, the empowerment for programme recipients carried out since the preparation stage (training and escorting) had an impact on the capacity building and made easier access to AAG. For this

particular aspect, again the implementation in Ciamis regency was better than in CST which was due to the dissimilarity in the quality of human resources between the two regions.

The positive impact of the programme was the decline in food-insecure households. There was relative improvement in food supply and access in Ciamis regency and quite moderate in CST. The low funds allocated for productive business capital and limited human resources became obstacles in expanding economic activities. The economic growth in Ciamis regency was moderate while in CST was limited.

Impact on food security

The food supply sub-system

The activities conducted within this sub-system included: (a) production increase and food access through on-farm, off-farm and non-farm activities; (b) the diversification of food production which covered technology, processing and post-harvest development as well as local food production; and (c) improvement on the fulfilment of family, villagers and regional food reserves through the development of family and village food barns / storage facilities.

The activities within Ciamis regency were able to increase food supplies and access as well as a food production diversification. Related to food supply and economic access, there were some issues raised including: (a) rice intensification could increase the productivity around 1-1.5 tons/ha; (b) the increase of secondary crops productivity was deficient; (c) vegetable growing in pots; (d) livestock rearing through sheep fattening and partnership system for broiler chicken and ducks; (e) fishery unit by growing fresh-water carps, *nila*, catfish and lobsters; (f) improvement on off-farm activities, such as producing banana chips, *kijing* traditional cakes, coconut sweets, cassava flour, bamboo and mats plaiting; and (g) improvement on non-farm activities, such as: home industry, kiosk and mobile trade system, food business/caterer.

For CST regency, the improvement on food supply and access as well as food production diversification remained insufficient. This was due to the following: (a) low human resources quality; (b) the application of farming technology remained moderate resulting from difficulties in the availability and access to technology; and (c) limited services in information, production facilities and funding sources. For non-farm business, the activity was only *ikat* weaving production.

The supply of food reserves through the development of family food barns-storage facilities in Sukadana village (Ciamis regency) was quite secure. Most AAG families had sufficient staple food reserve for two to four months ahead

even though the village food reserve was not available yet. In Sukamukti village, family food reserve was more varied. Non-rice food reserve was stored in the form of processed products such as *gaplek* (dried cassava) and *oyek* (rice formulated from dried cassava). When village food reserve was formed, each AAG member was obliged to store 50 kg *gabah* (unhulled rice grain) per harvest. These reserves will be distributed during food shortage period.

In CST regency, household food reserve has been practised a long time. Most households had food reserve for at least one season. Food production was stored for consumption and seeds for the next planting season. In Oebelo village, there was a group food barn established where paddy and corn were stored from member and will be lent out to the needy members during food shortage period.

The pre-condition distinction between Ciamis and CST regencies created different anticipations. Future anticipation for Ciamis regency related to food availability and access is the strengthening and modernization of food barn/reserve. As for CST regency, they required improvement in farm management and technology adoption, as well as food barns.

Food distribution sub-system

The productive business in food distribution sub-system was as follows: (1) developing food trade and distribution by group members or at the village level; (2) developing of collective product marketing at the village level; (3) development of markets at the village level as well as in wider regions; and (4) growth of market information systems (prices and commodity types) as the basis for group business planning.

In Ciamis regency, the activities in the distribution sub-system were not optimal. This programme has not been able to stimulate trade to accelerate food distribution whereas product marketing was done individually and market establishment and information were not developed well. This created a low bargaining position for secondary crops and horticultural commodities and marketing problem for processed food derived from secondary crops. In the case of paddy, a pending sales system was developed selling dried unhusked paddy.

Most food consumption in CST regency was local food based, except for Tuafanu village where rice for consumption had to be brought in from other regions. The rice necessity was relatively small (approx. 25 per cent) and mostly received from the *Raskin* (rice for the poor) programme. Overall, there was no major problem in food distribution. The problem occurred when there was harvest failure which caused the disturbance in food provision for this region.

The *Mapan* village programme in Tuafanu village has not been able to create the trade for food and collective marketing. The undeveloped trade sector in this village was mostly due to: (a) limited knowledge on trade business; (b) limited capital; (c) less access to markets outside the village; and (d) poor transportation facilities and infrastructure.

In Oebelo village, *Mapan* village programme was able to create collective marketing for rice, corn and tamarind, even though it was limited within one AAG. As it progressed, the marketing for tamarind was done through groups. The impact of this collective marketing was the increasing bargaining position for farmers and better prices received by farmers. In the future, the empowerment of AAG in trade business needs to be improved and supporting facilities will be required. In its development stage, those facilities were not provided yet.

Food consumption sub-system

The activities included in food consumption sub-system were: (1) the improvement on food consumption varieties based on regional resources; (2) improvement in family nutrition; and (3) the development of processing technology and processed food products.

Staple food consumption in CST regency diversified to corn, rice, tubers and banana. Corn was a staple food with a proportion of 75 per cent while the other 25 per cent was rice. The tubers and banana were consumed during food shortage/dry season when the stock of corn and rice was running low. Vegetables and animal protein consumption was less for this region as vegetable growing was not developing well. In general, there has been a consumption shift for programme recipient households by consuming vegetables and protein sources from beans, while animal protein was rarely consumed. In relation to family nutrition improvement, the assorted, nutritious, balanced, safe and healthy (B3AS= Indonesian version abbreviation) eating habits need to be intensified. In addition, there is a need to broaden the provision of supplementary food and develop processed food products.

In CST regency, processing of several commodities has taken place during development stage: (a) corn processing: from cob to dry-shelled corn then processed to milled corn, mixed with mungbean and groundnut; (b) the processing of groundnut to fried groundnut; and (c) coconut processing to become copra and VCO (virgin coconut oil).

Several types of local food crops (*ganyong* = *canna edulis*, cassava, taro and others) can be utilized as staple food. If they were using improved processing technology these staple foods could become 'ready to consume' products. However, the facilitation for the improvement of processing

technology and processed food products remained inadequate. The improvement of processing technology could increase the value added of a product thereby increasing access to food. Based on field research, the processing of tamarind has potential. The abundant tamarind production could be processed through pressing, packing, 'sweet-sour' candy or healthy drink products. Local people could benefit from the value added of the products since it created new employment.

In Ciamis regency, rice still dominated staple food consumption. There should be an agricultural extension on the diversification of a carbohydrate-source type of food, such as: cassava and *ganyong* which are cheaper than rice. Similar to CST regency, the B3AS eating habits also needs to be intensified here, as well as the improvement on processed food products.

In Ciamis regency, to give value added to the product, some improvement on post-harvest handling were executed. Product processing was modified into long-lasting and easy-served products. Marketing aspects remained a problem. To overcome this problem required a hard work starting from internal elements as the product produced was considered unconventional with limited usages.

Conclusions

1. *Mapan* village programme was a food security programme in food-insecure areas with activities such as: people's empowerment, infrastructure and insitutional development. Intitutional performance remained inadequate particularly in social capital improvement. A relatively short programme phase resulted in non-optimal outcome. The general impact varied and included improvements in infrastructure and a development programme based on the diversity of programme recipient villages. During the three-year programme, there was a significant decline in the number of food-insecure villages.
2. For the supply sub-system, in Ciamis regency there was an increasing productivity of paddy, secondary crops and vegetables, while in CST regency the increase was not that significant due to the dissimilarity in natural and human resources in the two regencies. Related to increasing access (in purchasing power) on food, this programme has been able to create income improvement from livestock rearing (sheep, broiler chicken, duck and fish) as well as from off-farm / non-farm activities. The prospects were: for Ciamis regency was the strengthening and modernization of rice barns-storage facilities / food reserve; for CST regency where production increases and food access were insufficient, the prospect would be improvements in farming business, technology adoption and food barns-storage facilities.
3. There was no difficulty in food distribution in Ciamis regency. For paddy in particular, the delayed-sales system has been practised but product marketing in groups has not been developed. For non-rice commodities and processed products, there are still obstacles in marketing with low bargaining position for farmers. In CST regency, there was also no obvious problem in food distribution since it was based on local commodities. Problems arose when there were harvest failures and natural disasters. In this region, collective marketing started to develop even though on a limited scale. The impact of this collective marketing was an increase in farmers' bargaining position and better prices received by farmers. In the future, the empowerment in trade needs to be strengthened, and facilitation in marketing expansion and diversification will be required. Up to the developing stages, these facilitations have not been formed.
4. In Ciamis regency, major food consumption was dominated by rice. The future prospect will be the intensification of non-rice food diversification and changing eating habits (assorted, nutritious, balanced, safe and healthy). In CST regency, major food consumption has been diversified based on the availability of local food. With this programme, there has been an increase in vegetable consumption and protein from pulses, whereas the consumption of animal protein remained inadequate. It required the enhancement in B3AS eating habits, intensification and expansion of supplementary food provision as well as the improvement of processed food products. ■

Workshop on Developing an Inclusive Strategic Plan for CAPSA and the Fifth Session of Technical Committee, 7-9 December 2009, Bogor, Indonesia

In April of this year, at ESCAP's 65th Session, the Commission adopted Resolution 65/4. This resolution, based on the results of CAPSA's Governing Council meeting a month earlier, called for CAPSA to be strengthened. The Council suggested the Centre continue its focus in the Asia-Pacific region but on the broader, more encompassing issues of food security and sustainable agriculture in a climate-change environment. To most effectively assist CAPSA's strengthening and to make the process more inclusive, a two-day Workshop entitled "Developing an Inclusive Strategic Plan for CAPSA" was held in Bogor, Indonesia, on 7-8 December 2009.

Mr. Keith Hargreaves (USAID) was the facilitator for this two-day workshop. CAPSA goals, strategy, work plan and timeline were discussed. Thirty-one participants from 13 countries (including five Technical Committee members) participated in the workshop.

At the end of the Workshop, CAPSA will have a framework for a strategic plan addressing 21st century issues and will be better positioned to respond to key challenges facing the Asia-Pacific region, particularly those related to food security and sustainable agriculture in a climate-changing environment.

Some presentations were made by participants representing their institutions, such as: Indonesian Benelux Chamber of Commerce (INA), PNG National Agricultural Research Institute, Pakistan Agricultural Research Council, French Agricultural Research Centre for International Development (CIRAD), Philippines Bureau of Agricultural Research; and Wageningen University and Research Centre.

On day three, the CAPSA Technical Committee met to validate the workshop process and resulting elements of the new CAPSA strategy. ■

The First Session of the Committee on Macroeconomic Policy, Poverty Reduction and Inclusive Development, 24-26 November 2009, Bangkok, Thailand

The first session of the Committee on Macroeconomic Policy, Poverty Reduction and Inclusive Development was held at the United Nations Conference Centre (UNCC), Bangkok, from 24 to 26 November 2009. The meeting was organized by the Macroeconomic Policy and Development Division of UNESCAP.

Implementation of Commission resolution 65/4 on the strengthening of the Centre for Alleviation of Poverty through Secondary Crops Development in Asia and the Pacific (CAPSA) was presented on the second day of the session. The introductory statement of this agenda item was delivered by Mr. LeRoy Hollenbeck, Head and Senior Economic Affairs Officer of CAPSA.

For more detailed info of the session please visit: <http://www.unescap.org/pdd/cmp/cmp2009/index.asp>. ■

The Seminar on "The Role of UNESCAP in Response to Sustainable Agriculture Development through CAPSA"

The Indonesian Embassy in Bangkok held a one day seminar on "The role of UNESCAP in response to sustainable agriculture development through CAPSA", on 12 October 2009. The seminar was attended by Indonesian students studying in Thailand.

Mr. LeRoy Hollenbeck, Head of CAPSA and Dr. Syed Nuruzzaman, Chief of Special Unit on Countries with Special Needs of UNESCAP were the resource persons in the Seminar. Dr. Nuruzzaman gave a slide presentation on UNESCAP's Theme Study on "Sustainable Agriculture and Food Security". While Mr. Hollenbeck focused more at the micro level with specific reference to the role of CAPSA. In his presentation Mr. Hollenbeck also elaborated on planned activities of CAPSA for the region and CAPSA's road map.

The seminar was a success as it benefited and enlightened the Indonesian students on the work of ESCAP and CAPSA in the region. ■

Palawija News

CAPSA's research newsletter is published three times a year and is distributed free of charge to interested individuals. To have Palawija News delivered by email please contact library@uncapsa.org, or to download, please visit www.uncapsa.org.

Authors are invited to contribute articles on socio-economic aspects of recent good practice in research and development related to secondary crops, food security, rural poverty alleviation and the agricultural sector in Asia and the Pacific.

The word limit for articles is 2500. Contributors are asked to first submit a concise summary of their article by email to library@uncapsa.org.

Palawija – derived from Sanskrit, this is the common term for secondary crops in Indonesian and traditional Malay languages.

CAPSA

The Centre for Alleviation of Poverty through Secondary Crops Development in Asia and the Pacific (CAPSA) is a subsidiary body of UNESCAP. It was established as the Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre) in 1981 and was renamed CAPSA in 2004.

Objective

CAPSA promotes a supportive policy environment in member countries to enhance the living conditions of rural poor populations in disadvantaged areas, particularly those who rely on secondary crop agriculture for their livelihood, and to promote research and development related to agriculture to alleviate poverty in the Asia and Pacific region.

CAPSA

Jl. Merdeka 145
Bogor 16111
Indonesia

Phone (62-251) 8343277
8356813

Fax (62-251) 8336290
capsa@uncapsa.org
www.uncapsa.org

By Airmail