



# Enhancing Sustainable Development of Diverse Agriculture in India

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## Introduction

Agriculture in India contributes nearly 25 per cent of GDP and two-thirds of the population depend upon it. With a population of over 1 billion, India accounts for approximately one-sixth of the world's population but on just 2.4 per cent of the world's surface area. Agricultural growth in the past has been sufficient to move from severe food crisis to aggregate food surplus today. Most of the development in agriculture has taken place in irrigated regions, overlooking the rainfed marginal environments. The rainfed regions are diverse in terms of resource base, varying from resource rich regions harnessing substantial production to resource poor regions with restricted potential. These resource poor regions are plagued with widespread poverty, degraded natural resources and are mostly dominated by secondary crops, namely coarse grains, pulses, roots and tubers. Barring maize and potato, secondary crops are losing ground against the finer cereals, and cash and commercial crops. Therefore, there is an urgent need to provide leverage to these crops by providing priority support in terms of technological advancement and much needed policy support vis-à-vis other crops. Moreover, some coarse grains and pulses are nutritionally superior and increasing the productivity of this group will provide more nutritional security. Keeping this in mind, the study on *Enhancing Sustainable Development of Diverse Agriculture in India*, under the research project "Identification of

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\* Indian Agricultural Research Institute, India. This paper is taken from *Enhancing Sustainable Development of Diverse Agriculture in India*, CAPSA Working Paper No. 82, 2005, UNESCAP-CAPSA, Bogor, Indonesia.

Pulling Factors for Enhancing the Sustainable Development of Diverse Agriculture in Selected Asian Countries" (AGRIDIV), with funding from the Government of Japan, is an attempt to provide much needed succor to secondary crops, thereby supporting millions of livelihoods in the rainfed marginal areas of the country.

## Major results

During the last 10 years, the agricultural sector continued to be a major contributor to GDP. The economy has been growing at an annual rate above 6 per cent since 1992-1993. As a consequence, per capita income has increased and reached an all-time high of INR 16,487 in 1999-2000.

The agricultural sector in the country continues to provide nearly 60 per cent of total employment, however, with

fewer employment opportunities and increases in the workable population, the unemployment rate is rising. The poor educational status of the populace to a greater extent has hampered economic growth. Currently, nearly sixty-five per cent of the population is literate.

Although the country has gained momentum in its economic fundamentals, the impact of development planning on the economic welfare of the people has not been equitable in the past. Income inequalities have become more pronounced. The significant increase in the savings of the household sector since 1983 reflects a rapid increase in the income of the highest 20 per cent. The Gini-Lorenz ratio for urban areas is about 10-12 per cent higher than that of rural areas confirming that the inequalities are more pronounced in urban areas. It can further be inferred that the

income of the higher groups has risen faster than their consumption expenditure. The ratio for the urban areas was stable at 0.33 over the two decades from the mid 1960's to the mid 1980's (Table 1).

The average size of operational holdings declined from 2.30 hectares in 1970-1971 to 1.28 hectares in 2000-2001 (Table 2). Marginal holdings have doubled during the past twenty-five years, while medium and large holdings have declined significantly. This marginalization has led to difficulties in modernizing farming practices resulting in low productivity. Further, due to increases in the total labour force and persistent marginalization of holdings, the number of landless labourers is on the rise and had grown to approximately 94 million in 1999-2000 (Table 3).

Table 1. Plan wise average Gini-Lorenz ratio

Five year plan	Rural	Urban
First (1951-1956)	0.34	0.38
Second (1956-1960)	0.33	0.37
Third FYP (1961-1965)	0.33	0.35
Annual Plans (1966-1968)	0.30	0.33
Fourth FYP (1969-1973)	0.29	0.33
Fifth FYP (1974-1979)	0.31	0.33
Sixth FYP (1980-1984)	0.30	0.33
Seventh FYP (1985-1990)	0.29	0.33

Source: N.S. Iyenger and P.R. Brahmananda, Estimated Distribution Parameters and their Behaviour. In P.R. Brahmananda and V.R. Panchmukhi (eds.), The Development Process of the Indian Economy, 1997.

## *Message from the Director*

On 6-9 December 2005 a major International Workshop on "Rural Prosperity and Secondary Crops Towards Applied Pro-Poor Research and Policies in Asia and the Pacific (RUPSEC)" was held at UNCAPSA in Bogor. Research contributions covered 14 countries and included a number of international organizations. The overarching theme of the workshop was diversification of agriculture.

The notion that growth in productivity and income from agriculture is invariably accompanied by diversification is a stylized generalization. It should be kept in mind that diversification usually comes in two types, in terms of crops and derived commodities, and in terms of value added derived from crops, "vertical diversification". This generalization is based on countless studies, historical, economic, demographic and sociological research.

A brief diversion into history may be illuminating to sketch the point. The general course of events in the agricultural sector in Europe, USA, Asia, part of Africa and Latin America show that productivity gains in agriculture release labour for employment in other sectors while at the same time prices of agricultural commodities go down, because of the expansion in production centres. This last element puts a lot of pressure on agricultural wages.

This is a very long-term process. How long term it is, is shown by the fact that only in recent years productivity of agricultural labour has reached the productivity level of industrial labour in the United States. Apparently the process took some two hundred years in a currently highly industrialized economy.

In Europe in the 17<sup>th</sup> and 18<sup>th</sup> centuries, the introduction of potato, and simultaneously of wheat and maize from Latin America made the industrial transformation possible, because of higher labour and area productivity. The same process, but then based on the introduction of maize and cassava, and also

rubber, coffee and sugar and oil palm (again from Latin America!) and tea from China, made the use of the rainfed areas possible in Asia in the 18<sup>th</sup> and 19<sup>th</sup> centuries. It led to a great wave of occupation of rainfed areas at low and higher altitudes throughout Asia. The broad based introduction of new crops, as in the case of Europe, created a new long-term structure in terms of comparative advantage for Asia as a whole. With very different impacts across the countries in Asia one must immediately add.

What can we learn from all this? Very simply the following: The dynamics in agriculture in Asia started also with the introduction of new species; a process that is still on-going. In other words, in Asia, agriculture is dynamic and one indeed observes a degree of diversification in agriculture, which is unique in the world. The grand hypothesis on Asia is that the extremely high overall degree of diversification has led to a very significant part of the population living in rural areas, boosted by agri-industrial linkage from the 19<sup>th</sup> century onwards and subsequently, with global prices going down, poverty centered in rural areas.

The period of the 1970s and 1980s in Asia, when through a multi sided set of policies productivity increased in rice, is in fact historically unique. But even then diversification invariably accompanied periods of growth.

Studies done at this centre and others have proven that well over 30-50 per cent of local economics in rural areas are still generated by agriculture and related services. Especially in Asia, agriculture continues to play a major role in providing livelihoods in rural areas.

In deriving policies from experience, policy makers in Asia would be well advised to keep in mind that the process of diversification supported by proper measures can significantly contribute to expanding income for rural livelihoods.

*J.W. Taco Bottema*

**Table 2. Distribution of operational holdings and their average size in India**

Category of holding	1970-1971	1980-1981	1990-1991	2000-2001*
		Numbers of holding (million)		
Marginal (less than 1 ha)	35.68	50.58	63.39	79.93
Small (1 – 2 ha)	13.43	16.10	20.09	23.31
Semi-medium (2-4 ha)	10.68	12.48	13.92	14.61
Medium (4 -10 ha)	7.93	8.08	7.58	6.63
Large (above 10 ha)	2.77	2.16	1.65	1.19
Total/ Average	70.49	89.39	106.64	125.67
		Average size of holding (ha)		
Marginal (less than 1 ha)	0.41	0.39	0.39	0.39
Small (1 – 2 ha)	1.44	1.43	1.43	1.40
Semi-medium (2-4 ha)	2.81	2.77	2.76	2.71
Medium (4 -10 ha)	6.08	5.98	5.90	5.78
Large (above 10 ha)	18.10	17.24	17.33	17.12
Total/ Average	2.30	1.82	1.57	1.28

Source: Government of India, Ministry of Agriculture, Agricultural Statistics at a Glance (various issues).

\* Figures for the year 2000-2001 are estimated.

**Table 3. Number of landless labourers (millions)**

Census years	Total labour force	Landless labourers	
		Number	Per cent of total labour force
1991	314.13	74.60	23.75
2001	441.17	93.52	21.20

Source: Compiled from CMIE, Basic Statistics relating to India Economy, Vol.1, All India, 1993 and 2003.

Due to diverse agro-climatic conditions in the country, a large number of agricultural crops, namely food grains and commercial crops, are produced. Since independence, the cornerstone of India's food policy has been self-sufficiency. But of late, in order to tap the huge potential and meet the challenges of a vast population and trade liberalization, diversification is receiving more attention from all quarters. Diversification gives wider choice in the production of a variety of crops in a given area to expand production and lessen risk. During the last three decades, diversification was largely in favour of fine cereals and commercial crops and has cast a shadow on coarse grains. The acreage under coarse grains has been taken away by more remunerative crops.

It was observed that Gujarat state, being highly diversified,

boasts the highest SID index (Simpson Index to measure diversification) within the selected states and Uttar Pradesh the lowest in terms of cropping patterns. The larger irrigated area of Uttar Pradesh encouraged the specialization of crops/farms in favour of superior cereals. In other words, the subsistence nature of the farming discouraged farm diversification. The Simpson Index for the country increased over the last two decades signifying government thrust towards diversification.

CGPRT crops, despite playing a vital role in the past and still providing livelihoods to millions of farmers in India, lost their importance in the changing agricultural economic scenario. Share of coarse cereals and pulses in gross cropped area (GCA) have come down to about 15 and 11 per cent respectively.

Major gainers are wheat, rice, and oilseeds to some extent. Among major CGPRT crop growing states (based on the Concentration Index), Maharashtra, Rajasthan, Karnataka, Madhya Pradesh (MP), Uttar Pradesh (UP), Andhra Pradesh (AP) and Gujarat together occupy more than 80 per cent of total area under these crops in the country. Acreage of coarse cereals fell substantially in most of the states under study. However, pearl millet and maize have increased significantly in some selected states. Area under chickpea has also distended more aggressively during the post-green revolution (GR) period. Similarly, area under potato has increased in all these states during both pre- and post- GR periods (Table 4).

Table 4. Area growth of secondary crops in major growing states

(Per cent per annum)

Crops	Period	AP	Guj	Ktk	MP	Maha	Rajas	UP
Sorghum	1966-1985	-2.16	-2.29	-1.58	-1.11	0.69	-1.14	-1.20
	1986-2002	-6.62	10.92	-2.33	-8.24	-1.98	-1.29	-4.12
Pearl millet	1966-1985	-1.83	-1.89	0.02	-2.87	-0.55	-0.17	-0.69
	1986-2002	-9.46	-0.74	-2.89	-2.26	0.56	5.86	0.32
Maize	1966-1985	1.74	1.26	7.17	2.18	6.01	1.26	-1.93
	1986-2002	0.64	3.77	4.87	0.81	5.32	1.57	-2.12
Finger millet	1966-1985	-1.57	-1.32	1.31	-	0.31	-	-2.66
	1986-2002	-4.78	-6.86	-1.78	-	-3.77	-	-0.86
Pigeonpea	1966-1985	1.20	8.34	2.43	-0.05	1.57	0.92	-0.79
	1986-2002	0.85	1.30	-1.14	-1.78	2.22	4.43	-0.63
Chickpea	1966-1985	1.80	1.68	0.14	0.76	2.02	0.60	1.00
	1986-2002	7.00	28.32	-2.27	0.19	-0.11	2.75	-4.96
Potato	1966-1985	-	7.53	4.63	3.82	-0.66	-	4.27
	1986-2002	-	9.36	4.13	6.18	3.09	-	2.57
Rice	1966-1985	0.93	0.47	0.05	0.90	0.87	1.89	1.34
	1986-2002	-0.65	0.30	0.99	-3.31	-0.52	0.84	0.11
Wheat	1966-1985	0.04	1.60	-0.11	1.04	1.33	2.53	3.05
	1986-2002	0.74	6.25	0.17	-0.54	4.90	0.76	-1.58

Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India.

Note: A.P.- Andhra Pradesh, Guj.- Gujarat, Ktk.- Karnataka, M.P.- Madhya Pradesh, Maha.- Maharashtra, Rajas.- Rajasthan, U.P.- Uttar Pradesh.

The strong negative growth in area led to decelerated growth in the production of secondary crops, even in the presence of moderate positive growth in their yields. However, maize and chickpea have shown robust growth in production during the post-GR period. Pulses are facing great difficulty in expanding acreage mainly due to highly

unstable yield performance. Potato is the only tuber crop under the secondary crop group, which has received praise from every corner of the country due to its wide acceptance as an all-season vegetable crop. On the other hand, non-CGPRT crops have shown a mixed response to the changed agricultural environment in the country. Due

to the favourable policy environment, area under fine cereals and other commercial crops has increased substantially. Only 12-13 per cent of cultivated area under secondary crops receives irrigation. Potato, being a cash crop, enjoys almost 100 per cent irrigated area (Table 5).

Table 5. Irrigation status of CGPRT crops *vis-à-vis* other crops grown in India

Particulars	1989-1991	1994-1996	1998-2000
Gross cropped area (million ha)	183.43	187.34	184.45
Share in gross cropped area (%)			
Fine cereals	36.01	36.23	38.46
Coarse cereals	20.48	17.02	16.17
Pulses	12.94	11.64	12.17
Potato	0.51	0.57	0.69
Gross irrigated area (million ha)	61.82	70.08	76.36
Share in gross irrigated area (%)			
Fine cereals	62.26	60.90	60.74
Coarse cereals	6.32	4.84	4.64
Pulses	3.64	3.84	3.85
Potato	1.52	1.54	1.69
Coverage under irrigation (%)			
Fine cereals	58.26	62.75	65.38
Coarse cereals	10.41	10.60	11.86
Pulses	9.48	12.31	13.07
Potato	100.00	100.00	100.00
All crops	33.70	37.33	41.40

Source: Agricultural Statistics at a Glance (various issues), Ministry of Agriculture, Government of India.

During the last three decades, the drop in per capita consumption of coarse cereals is almost two thirds. Secondary crops contributed to the tune of 12 per cent of the total consumption basket in rural areas of the country. In urban areas, secondary crops contributed only 8 per cent. In India, there is no specific market for secondary crops. Most of the states, however, have a huge marketed surplus of coarse cereals as well as pulses, but in the absence of proper marketing facilities and institutional support, these crops find difficulty in reaching the regulated markets. Maize is the major secondary crop, which is marketed in bulk in many states. Similarly, pearl millet and sorghum are traded in bulk in Maharashtra, Gujarat and Uttar Pradesh.

In many cases, the farm harvest price (FHP) is higher than the wholesale price (WHP), which shows the fragile market behaviour of these commodities due to low demand as well as inter-state trade. Further, a minimum support price for these crops does not have much

relevance in the country (Table 6). Thus, the study calls for a level playing field to be provided for secondary crops to ensure equitable growth in Indian agriculture.

### Policy recommendations

Under the existing conditions, India's economy, which is primarily agrarian, with small landholdings and huge population pressure, diversification of the rural economy should receive higher priority to meet the twin objectives of eradicating poverty and reducing unemployment. This will also lead to the improved welfare of the populace and the overall development of the country. Domestic market reforms are key to agricultural diversification. These reforms will ensure greater participation of small and marginal (holdings up to 2 ha) farmers predominantly growing secondary crops.

To gear up for the process of agricultural diversification in favour of secondary crops, policies need to be aimed at reforming institutional

arrangements, which can appropriately integrate production and marketing. The measures such as better market mechanisms, roads, appropriate infrastructure and promoting processing units for the value addition of secondary crops will go a long way in ensuring the diversification of secondary crops.

Further, research should be initiated to assess how appropriate institutional arrangements could convert the weaknesses of small farm holders into opportunities. Newer options like contract farming co-operatives and group action may lead to better opportunities to augment farm income. This will also avert the associated risks and uncertainty, and establish strong vertical linkages between production, marketing and processing. Hence, the pragmatic interplay of institutional, economic and technological policies is a must for multi-pronged strategies affecting the overall improvement of secondary crops. ■

Table 6. Price information for the major secondary crops in India

(INR per ton)

Crops	State	Prices	Years		
			1990	1995	2002
Maize	Rajasthan	MSP	1 800	3 100	4 850
		FHP	2 110	4 080	5 150
		WHP	2 018	4 343	5 311
Pearl millet	Rajasthan	MSP	1 800	3 000	4 850
		FHP	2 170	4 240	5 840
		WHP	2 104	4 071	5 554
Finger millet	Karnataka	MSP	1 800	3 000	4 850
		FHP	2 000	3 940	4 050
		WHP	1 725	4 336	5 817
Sorghum	Maharashtra	MSP	1 800	3 000	4 850
		FHP	2 288	4 000	5 280
		WHP	2 573	3 921	5 439
Chickpea	Madhya Pradesh	MSP	4 500	7 000	11 800
		FHP	5 770	8 810	11 820
		WHP	6 671	8 251	13 250
Pigeonpea	Maharashtra	MSP	4 800	8 000	13 200
		FHP	9 340	16 570	19 920
		WHP	8 188	13 750	13 638

Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India. MSP= Minimum Support Price, FHP= Farm Harvest Price, WHP= Wholesale Price.

# Status and Prospects of Feed Crops in Thailand

Chamras Rojanasaroj *et al.*\*

## Executive summary

UNESCAP-CAPSA undertook a project on the Prospects of Feed Crops in Southeast Asia (FEEDSEA) with the participation of four countries in the region. They include Indonesia, Malaysia, the Philippines and Thailand; countries typical to the region. One of the major project objectives was to investigate which of the countries has feed crops and if there is the potential to produce adequate feedstuffs for domestic consumption, or better still, produce an exportable excess supply to the region. A meeting was held among representatives of the four countries, the CAPSA project management team and those concerned in Bogor, Indonesia in August 2003 to consider the methodology for the research and which feed crops in each of the four countries should be studied.

The study in Thailand was facilitated by the availability of data from the Department of Agriculture, the Department of Agricultural Extension, the Department of Livestock Development and the Office of Agricultural Economics under the Ministry of Agriculture and Co-

operatives, the Department of Customs and the Fiscal Policy Office under the Ministry of Finance and the Department of Trade Negotiations under the Ministry of Commerce.

The econometric modelling involving maize, soybean, cassava and rice includes predictions for future production. Regarding the demand for feedstuffs, the estimations are based on increases in the livestock population.

With the collaborative effort of researchers from the Department of Agriculture, the Department of Agricultural Extension and economists from the Office of Agricultural Economics, analysis of the strengths, weaknesses, opportunities and threats of four feed crops was made as well as policy recommendations that would enhance the productivity of farming systems involving the four crops.

The GDP of the Thai agricultural sector has grown little whereas the sector's share of national GDP shows a downward trend. The rise in GDP of the livestock sub-sector is a consequence of increases in the production of broilers and hogs, which are exported in large quantities in the forms of frozen and chilled meats, and meat products with large export potential. In line with the booming livestock industry, the production of compound feed has followed to meet demand in spite of the somewhat higher prices over the feed produced on farmers' own farms. Based on the demand for feed of each major type of livestock in 2002, the total demand for feed from the Thai livestock industry was

11.938 million tons, which is predicted to increase to 17.367 million tons by 2015, expected to be spurred by dairy farming in response to increasing demand for dairy products in addition to the increasing production of swine and broilers.

Regarding the supply of feed crops, with better price incentives to produce and better management skills in the use of modern technology, the production of rice continues to be on the rise. In spite of the government's scheme to reduce the planted area of cassava, little reduction has been achieved. As a result, supply of the two feed crops has always been in abundance, whereas the supply of maize and soybean is insufficient but the expansion of the broiler and swine industries has been strong. While maize is a good source of energy for livestock, it can be totally substituted with milled rice products. It can be inferred that production of maize can potentially satisfy the domestic needs of the livestock industry.

Similar to fish meal and meat meal, soy meal is an excellent source of protein for livestock. However, having a higher protein content, fish meal and meat meal are often more expensive but require less concentration in livestock rations. Consequently, the cost of manufacturing compound feed is least when using soy meal. Unfortunately, the outbreak of mad cow disease in meat meal exporting countries prompted livestock farmers to use more soy meal. Hence, to satisfy domestic demand, the potential for soybean production is quite bleak.

\* Senior Economist, OAE, Ministry of Agriculture and Cooperatives, Bangkok, Thailand. This paper is taken from Status and Prospects of Feed Crops in Thailand, CAPSA Working Paper No. 84, 2005, UNESCAP-CAPSA, Bogor, Indonesia.

It can be considered fortunate that the Thai government has implemented a policy to assist its neighbouring countries to raise their farmers'

income, and at the same time alleviate its own domestic shortages of feedstuffs by initiating feed crop production enhancement projects, locating

the resource bases for producing maize and soybean in neighbouring countries through bilateral economic cooperation.

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## CAPSA News and Activities

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### AGRIDIV

**T**he implementation of phase II of the study has been completed and the revised draft of phase II of the country study reports were submitted to CAPSA by the national experts. Final review and editing of the drafts have been carried out by the project leader and associate project leader in parallel with on-line discussions with national experts.

As for the activities in the dissemination stage of the project, national experts presented the results of country studies in the workshop "Rural Prosperity and Secondary Crops: Towards Applied Pro-poor Research and Policies in Asia and the Pacific" (RUPSEC) on 6-9 December 2005. National experts selected some case studies for the presentation and submitted a paper in accordance with the objectives of the workshop. In addition to the RUPSEC, an in-country seminar is planned in each participating country during January to March 2006. The purpose of the seminars is to disseminate findings and recommendations of the AGRIDIV country study to stakeholders, especially policy planners and research managers in each country. National experts are requested to submit a

tentative plan for the seminar to CAPSA. ■

### IS/DB

#### Information Services

**O**n 15 November 2005, CAPSA attended a Seminar on "Optimizing Indonesia's Utilization of UNESCAP Programmes and Services: Challenges and Opportunities", in Padang, West Sumatera, organized by The Ministry of Foreign Affairs of the Republic of Indonesia through the Directorate General of Multilateral Economic, Finance and Development. The seminar is part of a series of seminars on UNESCAP, which were held in Surabaya (29 September 2005) and in Jakarta (25 November 2005). These seminars were designed to help government officials, academicians, journalists and communities in Indonesia (particularly in the western part of the country) understand the role and functions of UNESCAP and how Indonesia could benefit from its membership in UNESCAP.

On this occasion, CAPSA exhibited posters and publications. ■

#### Database

- **F**rom 31 October until 1 November 2005, Mr. Mohamad Reza (Associate Information Technology Officer, Central Support Services

Section, United Nations (UNESCAP/CSSS) visited UNESCAP-CAPSA to install Lotus Notes Client to all active CAPSA staff and configure access to ESCAP Domino Mail Server, accessing the UN corporate-wide intranet and using FTP services to send large files. He also gave a presentation about ESCAP Remote Access Services.

- In addition, one new feature is available on the website to provide more information concerning the regional workshop "Rural Prosperity and Secondary Crops: Towards Applied Pro-Poor Research and Policies in Asia and the Pacific", held in Bogor, Indonesia, 6-9 December 2005. ■

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### Towards More Applied Pro-poor Research and Policies

*A Workshop on Rural Prosperity and Secondary Crops in Asia and the Pacific*

**M**ore than 30 participants from 14 Asian countries, and five regional and international institutions attended a four-day workshop organized by CAPSA. The Indonesian Centre for Food Crop Research

and Development (ICFORD) hosted the event in its Conference Room from December 6 to 9. The AGRIDIV project supported by the Japanese government and JIRCAS was instrumental in the organization of the project since all eight countries included in this project contributed papers. This project provided a large portion of the funding. Additional resources were provided by UNESCAP to CAPSA on a project basis, and the CIP regional office for Asia and the Pacific supported the participation of China.

Seventeen papers presented cases and experiences related to research, policies and/or development actions to provide useful facts on how poverty alleviation could be promoted through secondary crop development. The case studies ranged from housewives' groups involved in soybean paste processing in Thailand, to the introduction of improved Yam varieties in Papua New Guinea, the development of potato processing in Sichuan, China and the adoption of maize technology in India.

The rationale for selecting this topic stems from the fact that poverty alleviation is the first Millennium Development Goal and the highest priority for governments in Asia and the Pacific. Rural poverty in particular, still represents the core of poverty in Asia and the Pacific and an important cause of urban poverty due to rural/urban migrations. Moreover, most of the rural poor live in disadvantaged areas and face harsh natural, socio-economic and political conditions. They rely

on secondary crops for subsistence and occasional cash. Secondary crops have potential for the generation of higher added value and increased well being but policies and research usually pay little attention to how this potential can be made a vehicle for lifting people out of poverty. Thus providing evidence on the contribution of secondary crops to poverty alleviation is needed to enlighten and help design and implement effective pro-poor research and policies.

For this reason, CAPSA invited not only scientists but also policy-makers from each participating country in an attempt to bridge the gap between science and policy. The workshop layout provided several opportunities for scientists and policy-makers to interact. The latter were systematically discussants of the papers presented by the former. In addition, a full day was devoted to working group sessions, giving more time for deeper exchanges among participants. The working group sessions helped participants to synthesize facts and key implications from the numerous presentations with a focus on two issues: lessons learnt and criteria for assessing how far research, policies and development actions based on secondary crop development are genuinely pro-poor.

In the coming weeks, CAPSA will co-ordinate with the authors the finalization of the seventeen papers taking into consideration the comments made during the workshop; CAPSA staff will also prepare a synthesis of the papers and a synthesis of the working group discussion.

This workshop is but the first step towards the establishment of collaboration links with the participating countries, hopefully leading to the establishment of common country and regional work programmes, where the participants will play a key role as a contact, resource person and implementer in each country. ■

More details on the workshop programme, content, paper summaries and presentations are accessible on CAPSA website at [www.uncapsa.org](http://www.uncapsa.org). For more information, please contact [ecopol@uncapsa.org](mailto:ecopol@uncapsa.org) and/or [agridiv@uncapsa.org](mailto:agridiv@uncapsa.org).

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## Commodities and Development

*Robin Bourgeois*  
*IS/DB Programme Leader*

**T**he South Centre\* organized a pre-WTO conference in Hong Kong on 12 December 2005. The conference was attended by around 40 participants from all continents. Specific issues were presented relating to the evolution of international markets for agricultural commodities and the implications for the most commodity-dependent developing countries (CDDC). This group is essentially composed of African, Caribbean, South American and Pacific countries. However, many issues debated were also relevant for Asian countries, principally countries producing and exporting tropical products, including beverages (coffee, tea, cocoa), and tropical oil (palm oil).

The main focus was on measures to mitigate the two key trends affecting international commodity prices: decline and volatility. The reasons for such patterns were debated, including the inherent nature of agriculture, the elimination of International Commodity Agreements and the (de) regulation of international trade, the oligarchic position of a small number of multinational companies (MNC). Some potential means to counterbalance the trends were also discussed. Three points were repeatedly put forward as possible avenues to improve the terms of trade (ToT) for developing country producers: diversification, tariff de-escalation, and control over abuse of economic power. Some supply management policies were also advocated.

### **Diversification**

All papers and many discussants upheld that horizontal diversification at the farm level (looking for other crops) and vertical diversification (farmers integrating the downstream processing and industrialization segments) was the only option to improve ToT. However, a poignant point made by a speaker from Niger highlighted that a horizontal diversification strategy is nothing more than a fuite en avant. His argument was that given the fact that farmers resorted to horizontal diversification after having used all available land resources for expanding production in response to declining prices, a change in production systems through the incorporation of new crops may

take two directions: a niche seeking strategy or a mass production strategy. In the first case, it cannot solve the macroeconomic dependence of CDDC countries at the aggregate level of the trade balance; niches tend to be rapidly saturated and experience commodity price decline. In the second case, it results in the transfer of downward pressure on prices to another commodity. In both cases, the farmers and the country would see the degradation of ToTs pervade more products.

Similarly, vertical diversification was challenged because of the importance of the basic investment needed (capital, infrastructure), the lack of knowledge and the entry barriers placed by actors already involved in these activities, in particular agents operating on behalf of the MNC.

### **Tariffs de-escalation**

Tariff escalation is used to describe increases in tariffs as a commodity is processed and manufactured. It is seen as a double constraint on the ToT and development of the CDDC. Firstly, it induces a net deficit in the import/export ratio value for all the CDDCs since they get a lower amount of foreign exchange to buy increasingly expansive processed goods; second, it hampers CDDCs' processed/manufactured goods to access developed countries' markets where the highest value added is generated. As such it also hampers the above-mentioned vertical diversification process.

### **Control over the abuse of economic power**

The dominant situation of a few MNCs was acknowledged as potentially creating a situation of abuse of economic power through an oligarchic concentration in purchasing commodities and an oligarchic concentration in selling manufactured products to consumers. The situation is illustrated by the indicators used by the USA and EU to characterize potential abuse of economic power: in USA, a cartel controlling at least 50 per cent of the market is considered a potential abuser; in Europe the standard is 15 per cent. When applied to tropical beverages, main minerals, and the cotton trade, both indicators show a potential situation of abuse. Another indicator of abuse is that price transmission elasticities are not equal according to where and how prices vary. The transmission of lower farm gate prices to consumers is weaker than when farm gate prices get higher. Reciprocally, higher consumer prices do not reflect on farm gate prices as lower consumer prices do. During the conference a proposal was made to require more transparency from MNCs through the provision of information in a similar way as what the WTO imposes on member countries in the management of STEs. However, by holding member countries accountable for the deeds of the MNCs, whose headquarters they host, this proposal is not likely to become overly operational. In fact, the issue of directly involving MNCs in the process of establishing a control system over

abuse of economic power remained unexplored. ■

\* Information about the South Centre and papers presented in this conference are available on the South Centre website at <http://www.southcentre.org>.

## 2nd Biomass Asia Workshop

*Robin Bourgeois*  
*IS/DB Programme Leader*

**C**APSA, with the presence of one staff member invited as a panel session commentator, participated in the 2<sup>nd</sup> Biomass Asia workshop\* co-organized by the Governments of Japan and Thailand and hosted by Thailand in Bangkok, 13-14 December 2005.

More than 400 participants attended the workshop and both the Minister of Agriculture and Cooperatives and the Minister of Science and Technology of Thailand were present at the opening session. Two Under-Secretary of State from Myanmar and Cambodia and the Vice-President of JIRCAS participated as presenters and/or chairperson.

This two-day event essentially focused on the availability of biomass resources in Asia and the Pacific. Country reports highlighted the current situation of biomass availability in mostly Southeast Asian countries, China and Japan. A relatively important number of presentations focused on two key sources of biomass-based energy: forests (fuelwood, sawdust, residues) and oil palm plantation (EFB, processing residues). However, other sources were also discussed such as organic waste (mostly urban), agricultural residues (dung, bagasse, rice husk) and energy crops (cassava, maize).

Country reports also highlighted the (non) existence of national public policies for renewable energy. Paradoxically, some of the least developed countries such as Lao People's Democratic Republic and Cambodia, which are exclusively dependent on imported fossil fuel have no such policies, while countries with more diversified access to energy sources including domestic RE have implemented such policies (Thailand, the Philippines, China). This seems to indicate that RE promotion policies are more offer-than demand-driven, in the sense that alternative sources already in use push for such policies while the possibility to substitute imported fossil fuel by locally-produced energy does not act as a driving factor.

In Panel Session 1 "Sustainable Biomass Production and Utilization: Potential and Possibilities" chaired by Dr. Noguchi, Vice-President of JIRCAS, presenters and commentators analysed some trade-offs and challenges in the use of biomass as a source of renewable energy. A point was made on the necessity to distinguish among different sources of biomass, in particular organic waste, crop residue, processing residue and energy crops. The rationale for this distinction stems from variety in availability that affects collection and processing of the material. Organic waste for instance requires mostly local processing; crop residues are difficult to collect because of the widespread distribution of small production areas (farms) with limited quantities. In addition, agricultural residues are often already used for non-energetic purposes such as restoring soil fertility, soil protection, and the

production of construction material to name a few. Residue from processing crops such as bagasse or EFB are often already used locally by processing plants for their own energetic needs, and usually do not pose the same type of problem for their transformation into energy; usually connection to the national grid and water/air contamination are the key issues. Energy crops pose a different problem since they are likely to compete for food use (maize, cassava, palm oil, sugarcane) and their transformation into energy may cause food security concerns at the local/national level.

Most of the plenary sessions and some of the panel session presentations focused on medium to large-scale technology aimed at reducing GHG emissions by substituting, to a certain extent, fossil fuel consumption with RE (Biodiesel, Biofuels) and or non degradable products by biodegradable products. As a commentator in this panel discussion I presented in five minutes some strategic elements of a pro-poor biomass development policy backed-up with a background slide. The text of these comments and the slide are available upon request at [ecopol@uncapsa.org](mailto:ecopol@uncapsa.org).

The workshop's final conclusions, including conclusions from each panel discussion, will be available shortly on the workshop website, according to the organizers. The 3<sup>rd</sup> Biomass-Asia workshop is scheduled to be hosted in Japan. ■

\* Information about the South Centre and presentations are available on the workshop website at <http://unit.aist.go.jp/internat/biomassws>.



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### Prospects of Feed Crops in Southeast Asia: Alternatives to Alleviate Poverty Through Secondary Crops' Development

Erna M. Lokollo and Budiman Hutabarat  
CAPSA Monograph No. 47. 2005. 221 pp.  
ISBN 979-9317-49-5

### 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 more 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 Asian and Pacific region.

### Functions

1. Coordination of socio-economic and policy research on secondary crops.
2. Networking and partnership with other international organizations and key stakeholders.
3. Research and analysis of trends and opportunities with regard to improving the economic status of rural populations.
4. Production, packaging and dissemination of information and successful practices on poverty reduction.
5. Dissemination of information and good practices on poverty reduction measures.
6. Training of national personnel, particularly national scientists and policy analysts.
7. Advisory services.

### Palawija News

Contributors are invited to submit summaries that cover recent socio-economic or policy aspects related to research or development of secondary crops and rural poverty alleviation in Asia and the Pacific. Submitted summaries should be sent by e-mail to [library@uncapsa.org](mailto:library@uncapsa.org) or by regular mail. Articles must be in English.

Submitted summaries should not exceed eight pages, including graphs, tables, references and author information.

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