



Short Article

Bio Energy

For agriculture, a historically unique window of opportunity has opened due to the soaring global oil price. Technologies which have been developed but were unable to be used may suddenly provide pathways of growth in agriculture and contribute to a cleaner environment.

Many have noticed the new opportunities and throughout the region technologies to generate bio-fuel are the centre of attention. There are basically two types of technology: (1) the extraction of oil from oil rich seeds; and (2) the processing of starch into ethanol.

It is well known that some countries outside the region, such as Brazil, have strived far ahead. In the case of Brazil, progress is pinned on the sugar industry and its by-products.

In Asia, the current picture shows that Thailand, which has a comparatively well-developed agricultural industry, has progressed relatively well in the production and use of bio-fuel. Thailand primarily uses cassava as a substitution for mineral oil and has set a very ambitious goal of becoming almost entirely self sufficient in energy through the use of ethanol. In Thailand, a large group of cassava producers now relies exclusively on this recently developed branch of the agricultural energy business.

India has also set an ambitious goal with a target of 20 per cent of all mineral oil blended with bio-fuel by 2012. In India, the pathway towards the new agricultural energy industry seems to favour the extraction of vegetable oil, in particular from the *Jatropha* plant. *Jatropha* is a sturdy and drought resistant plant, which can be grown in marginal and dry areas. There is general consensus that this crop could contribute to the living standards and income of farmers in marginal areas

Against this backdrop, however, a number of outstanding issues involved on both the demand and production side. On the production side, the main issue is simultaneously a strength and a weakness of *Jatropha*. It is inedible, cattle leave it alone and it is relatively free of pests and disease. Early experience of *Jatropha* shows that it was unpopular because it provided no value in terms of consumption in rural households. Furthermore, the current extraction rate of oil from the seed is below potential. It would seem that, in general, 16 per cent of the seed weight can be extracted as oil but advanced technology using solvents is required to improve efficiency. The oil content of *Jatropha* seed is reported to be around 30 per cent. On the demand side, product cleaning is necessary

before it can be mixed with fuel, while the energy industry and consumers have to be involved in setting industry standards.

In India, the government is keen to develop the sector on the basis of the current crude oil price, that is, without subsidies.

In Australia, intensive interaction between the government and industry has led to a situation which differs essentially from the Thai and Indian models. In Australia, the pricing of bio-fuel is based on the prevalent price of oil and the only measure taken by the government has been to provide producers with a tax break.

The essential difference, however, is that in Australia a very wide range of sources of fats and oils is used for the production of bio-diesel: used cooking fat, waste from slaughter houses, as well as vegetable oil. In Australia, a lot of time was spent to ensure that the quality of bio-fuel would meet the requirements of consumers and the energy industry. Although up-to-date information remains scant, there are many signs that the agricultural energy sector is expanding exponentially in Australia.

There is much to be learned from the experiences in Thailand, India and Australia by other countries in the region where the agricultural energy sector is yet to be conducive for rapid growth. The first and foremost lesson is that the agricultural energy sector uses natural resources and their by-products as the basis for production. This may seem a trivial statement but it is not. The fact of the matter is that the natural diversity of agriculture is such that energy can always be produced. Hitherto, in Asia, we see a mixed sourcing system, evidently starch and ethanol systems, as well as a vegetable oil system. The second lesson is that to balance the production of energy with the consumption of energy, a policy formulation process has to be entered and completed.

Most oil price analysts assume that the current high oil price is here to stay. Based on this assumption, a whole new branch of the agricultural industry is set to develop. Creativity and thoughtful policy formulation are necessary to turn this process to the advantage of the rural poor. The priority accorded this process should be as high as for food security and trade. The agricultural feed energy sector could become the fastest growing sub-sector in years to come ■

Written by J.W.T. Bottema, Director, UNESCAP-CAPSA, Bogor, Indonesia.

Flash **BREAKING**

Republic of Korea, ASEAN Agree on Agricultural Tariff Cuts in FTA

The Republic of Korea and ten ASEAN countries have agreed on agricultural tariff cutting measures that can help facilitate free trade and plan to sign a free trade agreement (FTA) by December. Under the deal, they will slash tariffs on 90 per cent of products they import by 2010, and lower duties on about 7 per cent of the remaining products to 0-5 per cent by 2016. The remaining 3 per cent has been classified as sensitive items that can be protected.

Nationwide International News, 2006. S. Korea, ASEAN Agree on Agriculture Tariff Cuts for FTA. Asia Pulse Pty Limited, <http://www.world-grain.com>, (3 May 2006).

Science Bypasses Indian Villages

The dramatic scientific advances enjoyed by India's urban elite have passed the country's rural poor by. It is not that Indian scientists have not developed technologies for rural areas. What is missing is a people-oriented approach to developing and delivering such technologies. Another problem is that people who work in scientific and industrial establishments do not live in rural areas, so do not understand rural problems. Science teaching is a mammoth task in rural communities, despite people being interested in the subject and appreciative of its potential.

Padma, T.V., 2006. Village India: Untouched by the Science Boom. Science and Development Network, <http://www.scidev.net>, (15 May 2006).

Viet Nam competes with Thailand on Rice Exports

Viet Nam has become the world's second largest rice exporter just a short period after it began exporting rice in 1998. It is now Thailand's biggest rival, after Thai consumers switched to importing rice from Viet Nam. According to Thai exporters, Viet Nam may export 38-39 million tons of rice this year, up by approximately 17 per cent over 2005 when, thanks to a bountiful crop, rice exports climbed by 27.3 per cent in quantity and 47.3 per cent in value.

Nationwide International News, 2006. Viet Nam Becomes Thailand's Biggest Rival in Rice Exports. Asia Pulse Pty. Limited, <http://www.world-grain.com>, (25 April 2006).

Poverty Alleviation: China Fights Gender Inequality

The population of poor women in China's rural areas dipped to 23 million at the end of 2005. Progress made in poverty alleviation for Chinese women include improvements in education, employment and social participation. The Chinese government is implementing an ambitious programme to help reduce poverty in 592 poor counties involving the lives of 100 million people. In forming gender-sensitive policies, China will assess the impact of poverty alleviation strategies and activities using the experiences of advanced foreign nations.

Zhuqing, Jiang, 2006. Poverty Alleviation Targets Gender Inequality. China Daily, <http://www.chinadaily.net>, (12 April 2006).

Supermarkets Challenge Small Farmers

With the rising living standards of Asians over past decades, the supermarket revolution is fast taking shape in much of the Asia-Pacific region, now including South Asia. This poses many challenges to farmers. Supermarket chains conduct business very differently from traditional traders and introduce a lot of innovations. This translates into a requirement for additional investment and new practices at the farm and post-harvest levels to meet the product and transaction standards of the supermarkets. Agricultural economists T. Reardon from Michigan State University and P. Timmer from the Center for Global Development in Washington, D.C., say in their paper "The Supermarket Revolution with Asian Characteristics" that under extreme competition, the constant striving to increase efficiency and to differentiate quality place a lot of pressure on the usually asset-poor small farmers, but small farmers cannot be excluded. Enhancing the assets of the farmers to meet the supermarkets' requirements is an important goal. Furthermore, governments should also facilitate business linkages with small farmers. Supermarkets are no longer just outlets for rich consumers in the capital cities of Asia. The rapid rise of supermarkets in the region shows that consumers find them a combination of convenience, quality and cost. These variables explain the further spread of supermarkets into the provinces and the food market of the urban poor. The issue of globalization also comes into the picture as retail establishments do not just source products from the local level, but from outside domestic borders as well. Many may continue to shop in the traditional markets, but according to T. Reardon "... these alternatives are [...] declining, and the farm sector in the medium term will need to be ready for that reality." ■

Based on Galon, R.M., 2006. Supermarkets Spreading Fast Across Asia, Pose Challenge to Small Farmers. The Searca Diary, <http://web.searca.org>, (2006).

A Middle Road for Organic Farming?

A global shift to organic farming would yield more food, not less, for the world's hungry, says Worldwatch Institute Senior Researcher, Brian Halweil. Organic farming tends to raise yields in poorer nations, precisely where people are hungry and cannot afford chemical-intensive farming. Where there is a yield gap between conventional and organic crops, it tends to be widest in wealthy nations, where farmers use copious amounts of synthetic fertilizers and pesticides in their perpetual attempt to maximize yields. In addition to this yield advantage, organic farming benefits wildlife, water and air quality, as well as food safety. The two sides of this issue - organic vs chemicals - are constantly at odds and some experts advocate a middle road that uses many of the principles of organic farming but depends on just a fraction of the chemicals used in conventional agriculture. Such an integrated system has the potential of great benefits for farmers, consumers and the environment ■

Based on Halweil, Brian, 2006. Can Organic Farming Feed Us All? World Watch, May-June 2006 issue, Washington-based Worldwatch Institute, <http://www.peopleandplanet.net>, (3 May 2006).

The Seeds of Hope

A small village in Tehri-Garhwal, India, pioneers a unique movement, known as Beej Bachao Andolan (BBA), to revive traditional agricultural practices and conserve indigenous seeds. To a casual onlooker the method of cultivation seems like a maddening range of crops grown on a small piece of land. But what the farmers are doing is avoiding monoculture. The method is called *baranaja* (12 grains), where many cereals and legumes are intercropped. This diversification represents security against drought and crop failure. Different crops are harvested at different times of the year and also ensure year-round food supply. Furthermore, the system maintains soil fertility and replenishes nitrogen. To protect traditional varieties of seeds and create awareness regarding their importance BBA organizes food marches as well as get-togethers and meetings. Today BBA conserves about 150 varieties of paddy from which 100 can still be grown. Effective pest control is accomplished using leaves of the walnut and *neem*, and the application of ash and cow urine. The use of traditional farming methods and seeds has resulted in higher yields. Moreover, health has improved as a consequence of a more balanced diet. Livestock health has improved too because more fodder is available. Concomitantly, soil fertility and agro-biodiversity have been conserved ■

Based on Info Change Agriculture and Food Security, 2006. SOS: Save our Seeds!, <http://www.infochangeindia.org>.

Cross-Border Infrastructure: Boost Trade, Reduce Poverty

Increases in income and overall national growth create new, stronger demand for better infrastructure-based services, such as transport, telecommunications, energy, water supply and sanitation. These services are important determinants of productivity, development and poverty reduction both within borders and across because they fuel and sustain growth. In turn, national growth can contribute to regional security and economic development - so long as cross-border infrastructure exists to support integration, such as airports, ports, tunnels and roads. ADB says that Asia and Pacific countries need to put more emphasis on regional cooperation to build such cross-border infrastructure since not only physical investment but also institutional coordination is required. Cross-border infrastructure development in the region, however, is constrained by political challenges, structural adjustments, and fiscal imbalances. The failure to provide consistent services and complete infrastructure leaves certain areas with little hope of economic development. The widening infrastructure gap between countries results in lower productivity, high transport and logistics costs, reduced competitiveness as well as slower growth. Bridging the gap means overcoming several formidable challenges: high investment costs, uneven distribution of benefits, financing constraints and varying regulatory responses. Regional initiatives based on shared frameworks require activities that define mutual benefits, develop regional mechanisms to allocate the costs and benefits of the investments, and harmonize regulatory and institutional frameworks for sectoral and concession activities ■

Based on WooChong, Um, 2006. Cross-Border Infrastructure Development Way to Boost Trade, Poverty Reduction. Asian Development Bank, <http://www.adb.org/Media>, (5 May 2006).

Flash EVENTS



Plant Biology 2006

Hynes Convention Center, Boston, Massachusetts, USA
5 - 9 August, 2006

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Twenty-sixth Conference of the International Association of Agricultural Economists

12 - 18 August, 2006
Gold Coast Convention & Exhibition Centre
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World Congress 2006 on Agricultural Engineering for a Better World

3 - 7 September, 2006
Bonn, Germany

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Transition to Sustainable Livestock Systems- Livestock and Environment Interactions and the Future of Animal Production

16 - 27 October, 2006
Zhengzhou, China

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Book Review

Income Generation and Poverty Reduction: Experiences of Selected Asian Countries

Development Paper No. 26, UN-ESCAP, Thailand, 2005. ISBN 92-1-120432-1

This Development Paper, produced by the Poverty and Development Division of the ESCAP, is intended to explore the experiences of some Asian countries in dealing with poverty reduction and income generation. The book consists of four separate papers, prepared by independent authors. The first paper is entitled: "Strengthening Income and Employment Generation in Central Asia: Policy Issues and Challenges". The second is a country study on "Income and Employment Generation in Azerbaijan". The third paper is also a country study focusing on "Poverty Reduction in China and Viet Nam", and the last one is a country study entitled "Social Capital and Poverty Eradication: Some issues from the Malaysian Experience".

The first paper, prepared by Amarakoon Bandara, *et al.*, covers common issues on income and employment generation in countries in Central Asia, which have undergone the transformation from centrally planned economies to market economies. Socio-economic problems and challenges faced by countries in the region after the break-up of the Soviet Union in 1991 are presented revealing that among others, annual real GDP dropped by as much as 50 per cent; average growth during 1991-1996 was negative for all countries; and inflation skyrocketed. Unemployment, which was virtually non-existent prior to the transition, increased substantially.

As the transformation process progressed, most of the countries exercised a shared macroeconomic reforms agenda, which incorporated macroeconomic stabilization, financial sector reform, tax reform, trade liberalization, and exchange rate management. The authors site major improvements as a result of these policies, e.g., more specifically from 2001 to 2004 GDP growth in these countries was considered the fastest in the world economy. The authors propose to continue such policies as well as (1) efficient institutional set up; (2) economic diversification; (3) improving the business environment; (4) increased regional co-operation, (5) investing in human capital and infrastructure development; (6) employment generation through SME promotion; and (7) improving transparency and good governance.

The second paper prepared by Vagif Rustamov *et al.*, is a country study with a deeper look at one of the countries in Central Asia, namely Azerbaijan. The country was one of the worst affected in almost all aspects, by the wave of economic transformation. The authors cited a number of income and employment generation programmes in their paper. Worth mentioning is the micro-credit programme, successfully implemented through the establishment of Microfinance Bank, directed to help develop SME entrepreneurs in the country. In addition, one notable measure was the land reform carried out through the free distribution of 1.3 million hectares of land

among rural residents establishing more than 45,000 individual farms. The paper is concluded with a complete list of further policies and recommends to continue the programmes into the future.

The third paper specifically addresses poverty reduction in China and Viet Nam, and was prepared by Vo Tri Thanh *et al.* As with other transition economies, both countries had to deal with three sets of reforms, namely, liberalization and stabilization; institutional changes; as well as the establishment of social programmes to ease the burden of transition. Both countries have taken a gradual approach to the transformation.

The author emphasized that socioeconomic achievements require three key factors: (1) the acknowledgment of the right to private business; (2) the opening and the integration of the economy into the world economy; and (3) maintenance of macroeconomic and sociopolitical stability. To conclude, the authors noted that despite all the successes of the reforms, both countries have to improve the efficiency of domestic resource use and the effectiveness of international integration, as well as addressing the risks of increasing poverty and income inequality.

The final paper, prepared by Mohamed Ariff *et al.* covers the Malaysian experience. The authors assert that poverty and inequality, when associated with ethnic communities, could be economically, socially and politically destabilizing. They cite the racial riots of 13th May 1969 as an example. Solutions based on the trickle-down effect alone are insufficient and hence direct access to capital for the poor, in particular social capital must be provided. As social capital is commonly considered to be beyond the auspices of the government, the paper is solely dedicated to explaining otherwise, at least in the case of Malaysia, and is devoted to explore exhaustively the various programmes of the government inherently forming social capital, directly or indirectly, which are believed to have contributed substantially to poverty eradication in the country. Programmes such as Amanah Ikhtiar Malaysia (AIM), designed by the Grameen Bank, a programme to create entrepreneurs among indigenous people have successfully reduced poverty in the country.

To conclude this review, I would say that the book is an excellent source of information and analysis on income generation and poverty reduction implemented through various policies, institutional settings and government programmes for formerly centralized economies and market economies ■

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