

Short Article

Future IT Use for Small-scale Farmers in the Asia-Pacific Region

Japan can be recognized as one of the front runners in the world for IT (Information Technology) development. The number of internet users in Japan reached 94 million or 78 per cent of the total population (Ministry of Public Management, Home Affairs, Posts and Telecommunications, 2010). Supported by the large number of internet users, IT infrastructure in Japan is also well developed. The broadband internet can be accessible in the 90 per cent of the land area of Japan and the government plans to increase the coverage up to 100 per cent by 2015 (The Sankei Shimbun, 2010).

Thanks to the well developed infrastructure and high popularity of internet use, IT is exploited in the various dimensions of agriculture from upstream to downstream in Japan, though IT use in agriculture fell behind comparing to the other industrial sectors. According to Tagami (1993), PC (Personal Computer) had been recognized as a major farming utensils in Japanese farms since 1988. Kojima (1983) described that the interest in IT use was growing among the Japanese extension workers in the early 1980.

In the early stage of IT development in agriculture, Value Added Network (VAN) was a major tool for communication. After the development of the internet, it became much easier for farmers and extension workers to use IT for their activities. Now we can see many Japanese farmers establish their own website to promote their agricultural products and disclose the production history of the products to fulfil the request for traceability. The extension stations also established their own website and provide various extension services using IT.

Various organizations provide farm advisory and extension services by using IT. One of the pioneers among those service providers is Arida orange database (<http://www.mikan.gr.jp/idea/top.htm>). The database was established in 1998 by a consortium of orange producers and other stakeholders in Arida region in Wakayama Prefecture, which is the production centre of Satsuma orange in Japan. The database is supported by the research institutes and extension organizations in the local government of Wakayama prefecture. The database consists of various information about orange production (the daily observation of orange growth, plant management manual, newly developed orange varieties, know how about pest control, etc.), marketing (the latest market prices, etc.) and other technical information (weather data, etc.). If farmers have any questions, they can send inquiries to the website and can get answers on-line from the relevant staffs in the extension organizations.

One may argue that the highly developed IT use for agriculture in Japan is just a tale of an industrialized society and that there are few implications for the developing regions in Asia and the Pacific in which rural societies are dominated by small-scale resource poor farmers who do not have access to IT use. However, it should be noted that the recent development of smart phones may progress IT use in rural areas dramatically in the near future.

One of the features of IT in Japan is the popular use of mobile phones for internet access. Japan has a unique history for its mobile phone development. Since 1999, when "i-mode" (a mobile internet service) was launched, mobile phone has been a popular tool to access the internet. The number of mobile phone users has been rapidly increasing in the Asia-Pacific region. In some countries, it is very common to see that farmers use mobile phones to get market information from traders so that they could sell their farm products at the highest price. The development of the smart phones that allow internet access through mobile phone is also getting popular in other countries. If the price of smart phones, which is currently around USD 500, reduces to affordable levels for small-scale farmers, their access to information services will be dramatically improved. Actually, some smart phone producers have already launched low price models with limited functionality targetting the emerging markets. Therefore, agricultural research institutes and extension organizations in the region should strengthen their effort to provide agricultural information which can be accessible through the internet and is easy to use for farmers and extension workers. If IT use through mobile phones enable better communication among farmers, extension staffs and researchers, it would greatly contribute to easy access to technical and marketing information with low cost and small energy. ■

Written by Tomohide Sugino, Representative of South-East Asia office, Japan International Research Center for Agricultural Sciences.

(References available upon request)

Promoting Information and Co-operation for Enhanced Food Quality

The demand for quality food is on the rise globally. To achieve food quality standards, governments and private enterprises have set production standards, certification procedures and inspection mechanisms. Smallholders, however, find it difficult to meet these standards, particularly due to high cost of compliance. To promote consumer health and improve the competitiveness of agricultural products, the government of Viet Nam (GOV) has been pursuing an active food safety policy, which consists of promulgating laws on standards and certification processes, providing training, and supporting supermarkets. The results of this effort have been moderate, both in achieving food quality objectives and in integrating small-scale producers into supply chains. However, the Superchain project, implemented in sticky rice, mountain beef, and vegetables, has shown significant results in linking small-scale producers in rural areas with supermarkets in Hanoi while also improving the compliance with food standards and quality requirements. The project has done this through sharing information and promoting co-operation among different players in the three value chains. It has facilitated the identification of consumer and retail demand for quality food; sharing information among producers, traders and representative of consumers; the establishment of farmer organizations; setting precise specifications on the use of agricultural inputs and production processes; and setting up of internal quality inspection mechanisms. It demonstrates that public regulation can be supplemented by private standards to improve compliance; that the size of farmer organizations matter for achieving the desired results; and that co-ordination among small-scale producers is critical for success. ■

Based on Moustier, P. and Dao The Anh, 2010. Farmers Organizations and Quality Chains in Viet Nam: Promoting Information and Cooperation. CIRAD-Perspective Standards No. 5, <http://www.cirad.fr/> (June 2010).

Making Agriculture Attractive to Young People

Young people leave agriculture and migrate to cities at rates often higher than population growth in many developing countries. The current outflow is not the result of economic development in the productive sector, but follows the neglect and exploitation of agriculture and the concentration of government expenditure on cities. Many countries, particularly in Sub-Saharan Africa, have experienced de-industrialization, thus increasing urban poverty, and have become net food importers due to the neglect of agriculture, making them vulnerable to crises such as the global food crisis of 2007/08. Agriculture must attract young people to ensure its growth and sustainability. This could be done using a policy framework consisting of three steps: creating an environment conducive for agriculture; active support policy; and supporting young people. The policy framework must ensure balance between agriculture and non-agricultural sectors and of rural and urban sectors. The exchange rate policy, trade policy, social policy and budget allocation must all be used to achieve this balance. Agricultural support policy must aim at improving competitiveness, both on domestic and foreign markets. It is also important to reduce transportation and transaction costs

by investing in rural infrastructure to enable better integration across markets and to achieve price stabilization. Finally, young adults must be provided with specific support to enter the agricultural sector. This should cover three areas: educational opportunities to equip them with the latest agricultural technology; financial assistance at affordable rates to start-up businesses in rural areas; and growth opportunities to lease more land and mechanization. ■

Based on Brüntrup, M., 2010. Making Agriculture Attractive. Rural 21 – Focus, <http://www.rural21.com/> (03/2010).

Increasing Food Security for Marginal Farmers in the Face of Climate Change

It is now accepted by most scientists and development professionals that the current increased climate variability and global temperature increases are human-induced through the burning of fossil fuels, deforestation, and land use changes. In developing countries, without modifications to production technologies, climate change will reduce average irrigated wheat yields in 2050 by around 30 per cent, and irrigated rice yields will fall by 15 per cent compared to current levels. While changing temperature and rainfall patterns have a direct impact on food production, agriculture is also part of the problem. With these multiple pressures, the long term outlook for improving food security for the one billion hungry people in the world today may look bleak. However, Practical Action (PA) – a development charity that has a unique approach to adaptation – is adopting a two-pronged approach to address the challenges. First and foremost, PA is actively working to help some of the poorest communities to adapt to their current reality, and to cope with expected future changes. Secondly, the organization works to influence policy, drawing on its experience, to advocate for greater support for proven technologies that increase food production from small-scale farming systems. In designing and implementing adaptation programmes, PA aims to start with the knowledge and experience of the communities: the challenges they face, their current coping strategies, and the cultural and socio-economic context that determines the social networks and institutions which can be drawn in to support them. PA has been working with communities in countries such as Bangladesh and Nepal. ■

Based on Berger, R. *et al.*, 2010. Increasing Food Security for Marginal Farmers in the Face of Climate Change: Programme Experience and Policy Recommendations. SCN News No. 38, <http://www.unscn.org/> (2010).

The Implications of Climate Change on Food Security in the Asia-Pacific Region

There is now sufficient evidence that climate is changing, and that humans are contributing by producing large amounts of greenhouse gas (GHG). Climate change will not only damage the global environment directly, but will also have major impacts on human security, of which food security is a key although under-researched component. This in turn has important implications for the international public health agenda. Climate change will have particularly serious impacts

Drought-tolerance: A Learning Challenge for Poor Farmers

Drought-tolerant (DT) crops could improve food security if researchers take downstream adoption challenges seriously. During a drought, DT crops could limit catastrophic losses and help households recover more quickly. However, farmers must be able to see the benefits of planting drought-tolerant crops for themselves. Public institutes and private firms release DT varieties only after they have proven themselves in experimental trials. A breeder may be satisfied that a DT variety outperforms conventional crops, but poor farmers in difficult growing conditions will insist on comparing varieties themselves. Yet, smallholder farmers often lack the control over conditions required to perceive subtle differences between competing varieties. Although DT research is often motivated by impending climate change, the more frequent extreme events may slow DT adoption. These learning complications are surmountable, but downstream challenges must be taken seriously. ■

Lybbert, T., 2010. Drought-tolerance: A Learning Challenge for Poor Farmers. Science and Development Network, <http://www.scidev.net/> (14 July 2010).

Do Farmers Gain from High Prices?

The persistence of a high rate of increase in food prices in the last two years has been a distressing aspect of the economy in India. Although commodity prices have increased across several commodities, high prices of grain have affected consumers the most. The battle between farmers and the government over minimum support prices and bonuses can be expected to continue. Although the mechanics are unclear, it now appears that the food-grain prices have caught up with international prices. The markets, which have been so far assigned a secondary role, may become important, especially with respect to international markets. Production in such conditions is more vulnerable to supply-side shocks, such as a weak monsoon. And it would still leave the old question alive: Who would let the farmer share the gains when the prices rise either beyond his markets or much after his harvest time? ■

Bhide, S., 2010. Do Farmers Gain from High Prices? The Hindu Business Line, <http://www.thehindubusinessline.com/> (2 June 2010).

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on food security in the Asia-Pacific region. Gradual processes of ecological adaptation in response to climate change will be serious enough, but the region is particularly susceptible to the devastating impacts of natural disasters which will increase in frequency. The rapid growth of Asia's mega cities creates particular problems of food supply, cost and reliability. In this setting, this paper examines the policy responses at both global and regional level. The ways in which a number of regional organizations in Asia have addressed some of the

Food Security and Diversification in Indonesia

Food policy in Indonesia has a bias towards rice if the relative number of programmes implemented on increasing rice production vis-à-vis other food crops is taken as an indication. A study by Mewa Ariani (2007) on the diversification of food consumption in Indonesia confirms that rice consumption (60.7 per cent of total consumption in urban and 63.9 per cent in rural areas) is still significantly higher than the national expected level of 50 per cent, for both urban and rural areas. Given that the consumption of food extracted from roots, vegetables, fat and meat is far below than the expected level to maintain health, the national food policy should urgently address the question of food diversification. In this regard, clear vision and supporting policies are needed. Revitalization of traditional and local food is likely to be useful. Systematic promotion and education on healthy foods and behaviour will also be essential for success. Part of the strategy should be to develop the local food industry including the promotion of processing. ■

Subejo, 2010. Food Security and Diversification. The Jakarta Post, <http://www.thejakartapost.com/> (24 June 2010).

China Pins Food-security Hopes on Humble Potato

In the land of rice, China is looking at an unlikely tool for maintaining growth and social harmony: the potato. Potatoes will not replace rice or wheat as mainstays of Chinese cuisine anytime soon, if ever. But potatoes need less water to grow than rice or wheat, and they yield far more calories per acre. With that in mind, the government in February signed an agreement with the International Potato Center, to jointly launch a major potato research centre in Beijing. Last month, the State Council announced subsidies for farmers who grow high-yield seed potatoes. And government-funded pilot programmes have been expanding in nearly every province, training farmers in innovative methods that raise crop yields and, with them, rural incomes. China produces and consumes more potatoes than any other country. But that's largely because of its huge population. However, if potatoes are to become a key to China's food security, the market for them must expand even more. ■

Keane, L., 2010. China Pins Food-Security Hopes on Humble Potato. The Washington Post, <http://www.washingtonpost.com/> (31 May 2010).

issues is looked at. A short case study of how Taiwan (China) responds to its own food security challenges is presented, something that is particularly pertinent given the devastating typhoon that so recently hit the island. The Asia-Pacific region can co-operate intra-regionally and internationally using the FIHS Network for the Asia-Pacific region, established in August 2009 and co-hosted by NHRI and the World Vegetable Center in Taiwan (China) through sharing information, prevention strategies, and adaptation policies to mitigate climate change and improve food security. ■

Ya-Wen Betty Chiu *et al.*, 2010. The Implications of Climate Change on Food Security in the Asia-Pacific Region. SCN News No. 38, <http://www.unscn.org/> (2010).

The Poorest and Hungry: Assessments, Analyses and Actions

Joachim von Braun, Ruth Vargas Hill and Rajul Pandya-Lorch (eds.), an IFPRI 2020 Book, International Food Policy Research Institute (IFPRI), Washington, D.C, 2009, ISBN 978-0-89629-660-2.

The Poorest and Hungry: Assessments, Analyses and Actions, a welcome addition to the literature on poverty and hunger, has been prepared as part of the IFPRI 2010 Vision.

This book focuses on the deprived, the poor and hungry in the world, and attempts to address a number of pertinent questions: (i) who are the poorest of the poor and the most afflicted by hunger, (ii) who are left behind or out of the poverty and hunger reduction process?, (iii) why is poverty so persistent in some places and among some people?, (iv) what are the key pathways out of poverty and hunger?, (v) which strategies, policies and interventions have been successful in eradicating poverty and hunger so far? This book is the outcome of an International Conference held in China in 2007 with the participation of more than 400 leading policymakers, researchers and practitioners from non-government organization, international agencies and the private sector from 40 countries on the theme "Taking Action for the World's Poor and Hungry People". In addition to presenting the views and policy prescriptions on how to improve the welfare of the world's poorest people, the editors have presented a compelling synthesis covering the salient dimensions covered by many authors.

This book consists of 5 parts, 44 chapters and 7 essays. Part 1, Understanding Ultra Poverty and Hunger; Theory and Measurement, reviews the progress to date on poverty reduction over the past two decades in many countries, and highlights the fact that East Asia and the Pacific (particularly, in China and Viet Nam) and South Asia have significantly reduced poverty but that the absolute number of poor in Sub-Saharan Africa remained unchanged. Part 2 Fostering Inclusive "Growth+" for the Poorest, focuses on economic growth, in particular on policies that enables income growth for the poorest. Chapter 18 is particularly worth mentioning as it has covered the key policy lessons of China's monumental progress in alleviating poverty. The way fiscal and financial reforms have been undertaken by the Chinese government, and their broad coverage, provide useful insight on how such reforms can be undertaken in other parts of the world. Part 3 focuses on social policies and insurance. The main policy lesson of this section seems to be that policy action is important to ease poverty and ensure growth, but an enabling environment for poor households to fully participate in development is critical. Successful experiences from Brazil

and Chile in protecting the assets of the poorest are also well documented in this section. Focusing on Social Policies and Insurance, it shows how they have been complemented by macroeconomic conditions. Part 4 describes how to include the excluded groups – minorities and marginalized people in the process of development and reviews how an excluded group can be empowered by political representation, economic resources and provision of key services such as education. In this regard, the experience of Andhra Pradesh, India indicates that the benefits of working together can be fully realized only through organizations that belong to their members and allow them to participate freely and play a key role in all activities. Put differently, complete ownership by the poor is a must for success. Part 5 covers policies for effective actions and analyses how to bring about these actions including the development of strategies which consist of setting goals and selecting the optimal mix of policy and policy instruments. The section has identified that adverse ecological conditions, inadequate technology, lack of capital and education, cultural factors and institutional failures are the most critical factors to be addressed by the development process. Removing these constraints would require adequate funding, capacity development and effective governance. It ends with a discussion on strategies to scale up successful projects in a given community so as to ensure widespread success.

Three key messages emerged from the book. First, the poverty reduction strategies have so far not reached the very poor and hungry, or failed to make a dent in their deprivation. Second, direct action targeting the very poor and the involvement of the poor themselves are needed for success. In particular, such actions are effective when poverty reduction programmes simultaneously address key issues such as nutrition, health, credit and education. Third, addressing the question of marginal communities is of critical importance. The book once again confirms that the government has to play a critical role in alleviating poverty and ensuring the success. ■

Reviewed by Edi Basuno, Programme Leader R&D, CAPSA-ESCAP, Bogor, Indonesia.