RNR NEWSLETTER

A monthly publication of the Ministry of Agriculture & Forests

Vol. II Issue No. 4 www.moaf.gov.bt April 2014

This model is being used to provide rural farmers localized (non-urban) forecasts so that they can prepare for weather-related events

Pg. 3

Climate Change Information system will help to identify current as well as future risks and vulnerabilities related to Climate Change

Pg. 5

Information and Communication in the development of the RNR sector

Publicity and promotion materials for the development of agriculture

Information and communication have always mattered in agriculture. Ever since people have grown crops and raised livestock they have sought information from one another. What is the most effective planting strategy on steep slopes? Where can I buy the improved seed or feed this year? How can I acquire a land title? Who is paying the highest price at the market? How can I participate in the government's credit program? Producers rarely find it easy to obtain answers to such questions, even if similar ones arise season after season. Farmers in a village may have planted the "same" crop for centuries, but over time, weather patterns and soil conditions change and epidemics of pests and diseases come and go. Updated information allows the farmers to cope with and even benefit from these changes.

"Many of the questions asked by farmers (including questions on how to increase yields, access markets, and adapt to weather conditions) can now be answered faster, with greater ease, and increased accuracy"

Providing such knowledge can be challenging, however, because the highly localized nature of agriculture means that information must be tailored specifically to distinct conditions.

Agriculture is facing new and severe challenges in its own right. With rising food prices that have pushed over 40 million people into poverty since 2010, more effective interventions are essential in agriculture (World Bank 2011). The growing global population, expected to hit 9 billion by 2050, has heightened the demand for food and placed pressure on already-fragile resources. Feeding that population will require a 70 percent increase in food production (FAO 2009).

Cont. on page 2

Cont. from page 1 :Information and Communication in the development of the RNR sector

Mobile phone activated irrigation system

Filling the stomachs of the growing population is only one reason agriculture is critical to global stability and development. It is also critical because one of the most effective ways of reducing poverty is to invest in and make improvements in the agricultural sector. Even after years of industrialization and growth in services, agriculture still is a major source of revenue for the country. Because agriculture accounts for the vast majority of the people's livelihood activities, it is also the sector that holds the most promise economic growth. No less important, improved agriculture also has a direct impact on hunger and malnutrition, decreasing the occurrences of famine, child stunting, and maternal infirmity.

Given the challenges, the arrival of information communication technology (ICT) is well timed. The benefits of the green revolution greatly improved agricultural productivity. However, there is a demonstrable need for a new revolution that will bring lower prices for consumers (through reduced waste and more-efficient supply chain management), contribute to "smart" agriculture, and incentivize farmers to increase their production. Public and private sector actors have long been on the search for effective solutions to address both the long- and short-term challenges in agriculture, including how to answer the abundant information needs of farmers. ICT is one of these

MoAF website shares information on the program and activities for the development of the RNR sector

Cont. from page 2 :Information and Communication in the development of the RNR sector

solutions, and has recently unleashed incredible potential to improve agriculture in developing countries specifically. Technology has taken an enormous leap beyond the costly, bulky, energy-consuming equipment once available to the very few to store and analyze agricultural and scientific data. With the booming mobile, wireless, and Internet industries, ICT has found a foothold even in poor smallholder farms and in their activities. The ability of ICTs to bring refreshed momentum to agriculture appears even more compelling in light of rising investments in agricultural research, the private sector's strong interest in the development and spread of ICTs, and the upsurge of organizations committed to the agricultural development agenda.

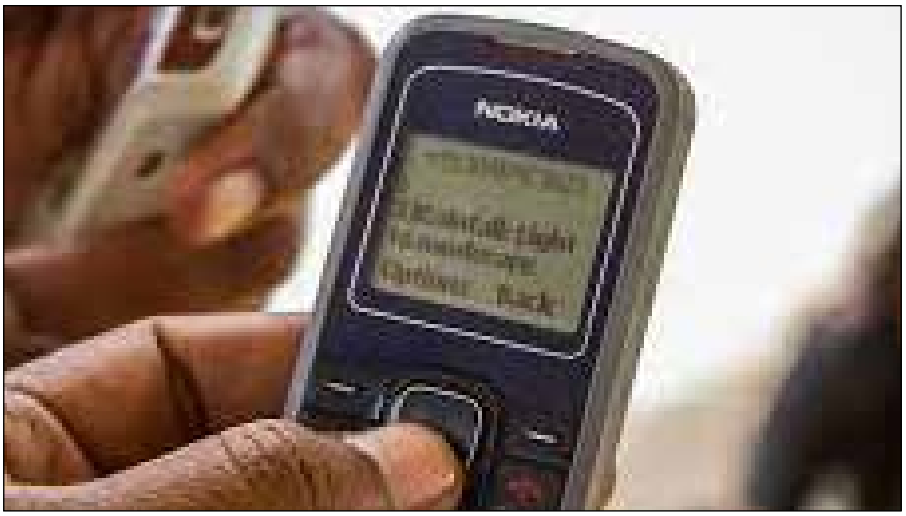
But what exactly are ICTs? And can they really be useful and cost-effective for poor farmers with restricted access to capital, electricity, and infrastructure? First, an ICT is any device, tool, or application that permits the exchange or collection of data through interaction or transmission. ICT is an umbrella term that includes anything ranging from radio to satellite imagery to mobile phones or electronic money transfers. Second, these ICTs and others have gained traction even in impoverished regions. The increases in their affordability, accessibility, and adaptability have resulted in their use even within rural homesteads relying on agriculture. New, small devices (such as multifunctional mobile phones and nanotechnology for food safety), infrastructure (such as mobile telecommunications networks and cloud computing facilities), and especially applications (for example, that transfer money or track an item moving through a global supply chain) have proliferated. Many of the questions asked by farmers (including questions on how to increase yields, access markets, and adapt to weather conditions) can now be answered faster, with greater ease, and increased accuracy. Many of the questions can also be answered with a dialogue—where farmers, experts, and government can select best solutions based on a diverse set of expertise and experience.

Developing awareness materials in the form of documentary films

The types of ICT-enabled services that are useful to improving the capacity and livelihoods of poor smallholders are growing quickly. One of the best examples of these services is the use of mobile phones as a platform for exchanging information through short messaging services (SMS). ICT-enabled services often use multiple technologies to provide information. This model is being used to provide rural farmers localized (non-urban) forecasts so that they can prepare for weather-related events. In resource-constrained environments especially, providers use satellites or remote sensors (to gather temperature data), Internet (to store large amounts of data), and mobile phones (to disseminate temperature information to remote farmers cheaply)—to prevent crop losses and mitigate effects from natural adversities.

Other, more-specialized applications, such as software used for supply chain or financial management are also becoming more relevant in smallholder farming. Simple accounting software has allowed cooperatives to manage production, aggregation, and sales with increased accuracy.

Importantly, ICT is not an end to agricultural development. The excitement generated by ICTs as they spread throughout developing countries has often masked the fact that their contributions to agriculture are both rapidly evolving and poorly understood. It is too early to have a clear idea, supported by rigorous analysis, of how ICTs support agricultural development, and under what conditions. While there is credible evidence of positive impact, questions remain about how to make these innovations replicable, scalable, and sustainable for a larger and more diverse population.



Weather forecast through SMS

The need for RNR Climate Change Information System

Tashi Yangzom, ICS

40% of the total revenue is generated from hydro power

Bhutan, a mountainous country lies mostly in the eastern part of the Himalayan range with complex topographic features. Though it is difficult to describe the uniform pattern of climate for the region, it is seen to have a wide range of micro-climatic conditions within its three distinct climatic zones. But Bhutan with its significant Economic progress in the recent years is now experiencing the change in climatic conditions and its adverse effects. The occurring climate change is primarily seen to be dominated by human influences or human induced changes in the atmospheric composition which are becoming massive enough to exceed the limits of natural unpredictability.

Because of which, in recent years, Bhutan has seen an increase in landslides & flashfloods due to heavier rainfalls and also a change in the wind patterns leading to the destruction of crops, houses and environment as a

landslides caused by heavy rainfall

Cont. from page 4: The need for RNR Climate Change Information System

the outbreak of Giant African Land Snails (GALS) in Gyelposhing

whole. The most significant evidence of climate change would be the outbreak of the invasive Giant African Land Snails (GALS) in Gyelposing and also the outspread of army worms which is threatening our environment, our agricultural crops, ecological balance, farming communities and our health.

The Climate Change in Bhutan is mainly influenced by the rising temperature which is estimated to increase drastically causing glacial retreat. With such phenomenon at hand, Glacial Lake Outburst Floods (GLOFs) becomes Bhutan's strongest climate change challenge. On the other hand, it is a paradox that Bhutan is gifted with plenty of fresh renewable water resources with 'highest per capita water availability' but it still faces a localized water scarcity. It was also recognized that the impact of climate change has the significant implications for the overall development of Bhutan. This is because one of the most vulnerable to the effects of climate change was observed as 'water resources' and 'agriculture' which is the back bone of our economy. Whereby 70% of the people are depended on subsistence farming and 40% of the revenue of the country is generated from Hydro electric power and both sectors are greatly depended on climate change.

Hence Climate change may greatly alter the availability of Renewable Natural Resources by changing the weather patterns such as precipitation, humidity, wind speed and cloudiness causing rise in seas levels, melting of glaciers and increased likelihood of floods and droughts. Since we know that anthropogenic climate change is likely to continue for many centuries, it is very important for us to be prepared for such associated risks to either mitigate or adapt to it. While talking about mitigation and adaption there arises a demand for information related to climate change which is poorly documented or is inefficient to draw any conclusions. Therefore understanding Information System as key enablers of both mitigation and adaptation, maintenance of Information System is very important as it has an enormous potential to contribute innovative solutions to climate change problems.

Consequently RNR Climate Change Information System (RNR-CCIS) can be used to create a basic data to assess impacts of climate change on agriculture, food security, water resources, forests and biodiversity. This RNR Climate Change Information system will also present us an overview of the impacts on the RNR sector thereby helping to identify current as well as future risks and vulnerabilities related to Climate Change. Climate Change information system will maintain documentaries related to the affects of climate change on the RNR sector, as a result this availability of previous incidences will help create a vast pool of knowledge to guide and learn and innovate. This Information system will also enable education of the most affected group particularly the poor ones, through awareness campaigns and presentation of documentaries with evident materials at hand. The information system can also communicate the information to other sectors and common people by developing advanced technology to link users to various data providers. Thus presence of such reliable, accessible, usable, and timely information on climate change can be used by scientists, decision makers, and the public as a planning instrument for better practices to ensure availability of Renewable Natural Resources for all times to come.

Leisure

Sudoku Puzzle

Fill in the grid with digits in such a manner that every row, every column and every 3x3 box accommodates the digits 1-9, without repeating any. Answer in the next issue

	1	3	4					
				5				7
		2			8	6		5
		7						2
	5			4			1	
8						9		
4		6	3			8		
2				8				
					7	3	6	

Advance Course for Experienced Tractor Operators

Agriculture Machinery Training Centre, under the Agriculture Machinery Centre (AMC) in Paro, is conducting an Advance Course for Experienced Tractor Operators on troubleshooting, repair and maintenance of Agricultural Machineries for a period of 3 weeks. The course will commence from 12 to 30 May 2014.

Therefore, all organisations and agencies are asked to send eligible candidates for the training. However, the candidates DSA, & expenditures should be borne by the respective offices. The Centre will provide only their lodging in the training centre's dormitory.

- AMC

Access and Benefit Sharing Policy of Bhutan, 2014

Please download this draft ABS policy for comments and suggestions on the policy document.

Comments/suggestions may kindly be sent to Dr. Tashi Yangzom, PD, National Biodiversity Centre at yangzome3@gmail.com or sdema06@gmail.com.

Announcement
Call for Papers

The deadline for submitting manuscripts for Proceedings of BES has been extended to 16 June 2014.
The Bhutan Ecological Society is expanding the scope and relevance of its journal, Proceedings of BES, to the broader Himalayan region, in recognition that the region's conservation issues and potential solutions across national boundaries.
To accommodate this change in editorial policy, we are extending the deadline for initial manuscript submission to 16 June 2014. The inaugural issue of Proceedings of BES will now be launched in November 2014.

bhutanecological@gmail.com or call +97517724714 or +97517508047.
Visit our site:
www.bhuatanecologicalsociety.org.bt

MAGIP NEWSLETTER
IFAD
Enabling poor rural people to overcome poverty
A monthly publication of the Market Access & Growth Intensification Project
http://asia.ifad.org/web/magip April 2014

Capacity building of local stakeholders to expand the school linking programme

By Binay Lama, SNV

Under the framework of MAGIP, SNV Bhutan and the Regional Agricultural Marketing Cooperatives (RAMCO) is enhancing the capacity of local stakeholders to expand the successful school-linking programme. Out of the 114 farmer groups participating in the Vegetable Value Chain Programme-East (VVCP-E), 89 groups have been linked to 36 schools and institutes in east Bhutan for the contractual supply of vegetables and other RNR-products. The VVCP-E programme was started by SNV and RAMCO in 2011 to provide sustainable markets for local summer vegetables in the bordering Indian towns and local schools, institutes and markets. This initiative received a good support and cooperation from the relevant stakeholders such as the Dzongkhag and geog administrations, extension officials and RDC-Wengkhar.

From 21 April 2014, a series of district level workshops are being conducted in all the six eastern Dzongkhags, where the participants are gups, mangmis, geog extension officials, Dzongkhag agriculture and education officials. The main objective is to build the capacity of these 'local actors' and empower them to conduct the facilitation of contractual supply of vegetables in their own localities, between schools/ institutes and farmer groups. They would also prepare a detailed 'action plan' to link the remaining schools/ institutes to local farmer groups, besides forming and strengthening the new farmer groups to undertake similar contractual supply.

Local actors learn facilitation skills in Trashigang

On April 22, the Rangjung Woeselling Shedra and the Rangjung TTI was linked to three farmer groups of Chaling, Songphu and Dramang, where the Songphu gup and extension official co-facilitated the contracting. Similarly, Thragom LS school in Trashiyangtse and Thungkhar LS school in Trashigang were linked to vegetable groups in their respective villages.

By the end of 2013, the 89 farmer groups had sold approximately 500 MT of vegetables to the schools earning an income of over Nu 7.2 million. In the first quarter of 2014, these farmer groups had already sold 110 MT of vegetables to the schools and institutes, worth Nu 1.72 million. This clearly shows the successful business model that has been created to facilitate contractual arrangement between farmer groups and schools/ institutes.

SNV also helped develop a guideline to facilitate the contractual supply of RNR-products by farmer groups to institutes. This publication was launched in February 2014 by Lyonpo Yeshey Dorji, the Minister of Agriculture and Forests and Mr. Tom Derksen, SNV Managing Director

Songphu gup facilitates the contracting process in Rangjung

Silage making using plastic bag: A success story in Samdrupjongkhar

Thinley Rapten, Dzongkhag Livestock Officer and Dr. NB Tamang, DoL

During the summer farmers with improved pasture have enough forage for cattle exceeding their requirements. As silo pits are not available in most of the farms, and large quantity of grass required for filling the silo pit and even if farmers have, silage making in silo pit is reportedly cumbersome and inconvenient for farmers.

In absence of suitable technology at the farmer's level, excess grass continued to grow in field, producing very long fibrous material of low feeding value.

In order to make optimum use of grass grown in summer, Dzongkhag Livestock Sector applied a new silage making techniques- using plastic bags that was learnt at Thailand during the study visit in September, 2012.

About 20MT of excess summer forages were conserved as Silage by over 200 households in Deothang, Orong and Wooling in summer 2013. The monitoring visit made by the MAGIP officials in March 2014 revealed that the silage produced was of good quality with pleasant aroma. Some farmers still have reserve for feeding during next few months. Farmers shared that with silage availability even during the lean season, milk production of the dairy animals could be maintained which otherwise would drop in lean season due to inadequate fodder. Farmers are enthusiastic to continue applying this technology for higher livestock productivity and income.

Chaff cutter placed at central location for cutting grasses into pieces

What is silage?

Silage is fermented, high-moisture content stored fodder which can be fed to ruminants (cud-chewing animals such as cattle and sheep). It is usually made from grass, fodder maize, sorghum or other cereals, using the entire green plant.

Why do we make silage?

- To build up forage reserves for utilization during periods of feed deficiency, e.g. dry season.
- As a routine feed supplement to increase productivity of animals.
- To utilize excess growth of pasture for better management and extended utilization.

When do we make silage?

During the summer season forage species grow very fast, with forage yields often exceeding animal requirements. If not cut and fed to animals, it will continue to grow, producing very long fibrous material, low in feeding value. Excess high quality fodder can be preserved for use during the dry season.

Silage is a nutritious food for livestock, retaining a much larger proportion of nutrients compared to dried crop stored as hay . It is easily digestible and milk production by animals can be maintained by feeding silage.

If undelivered please return to:

Information and Communication Services (ICS)
Ministry of Agriculture and Forests
Post Box: 1095, Thimphu-Bhutan
Tel(PABX): 02-323765/321142/322855
Fax: 02-324520
Email: ics@moaf.gov.bt
Website: www.moaf.gov.bt

To