



Decision Support Systems for Enhancing Resource Productivity: Web Interface, Mobile Application and Bulk Messaging

Background

Although the contribution of the agriculture sector to the overall Gross Domestic Product (GDP) in India has reached below 14 per cent in 2013-14, it still supports the livelihoods of almost two-third population. The current situation indicates lower levels of productivity of the sector as compared to the industrial and service sectors. However, a better growth of agriculture sector is still needed to sustain national food security goals, improve the economic condition of the small and marginal farmers who cultivate almost 80 per cent of the Indian land holdings and reduce rural poverty in India.

With time, the challenges for agriculture sector have increased manifold. Sustainable growth in agriculture is not only dependent on the use of quality inputs but has to factor in the rational use of natural resources, climate change and timely access to quality information on inputs, outputs, markets, natural resources, weather and other related parameters. Access to information can significantly improve the efficiency of resource use, which is an important concern in light of fast depleting natural resources such as groundwater and soil health. It can also help in prioritization of input use, output planning and adaptation to the changing climate.

Decision Support Systems

Centers for International Projects Trust (CIPT) is collaborating with local partners such as Punjab Agricultural University in Punjab, Krishi Vigyan Kendras in Gujarat and Birsa Agricultural University in Jharkhand to Develop Decision Support systems (DSS) in local languages at different platforms to provide useful information to the farmers on agriculture. While a large amount of information is generated regularly, ensuring that it reaches the farmers in a faster and cost effective manner is always a big challenge. Three important initiatives of CIPT are: 1) web interface, 2) mobile applications, and 3) information dissemination through bulk messaging.

These decision support systems will initially organize the information available with the State Agricultural Universities and State Agriculture Departments for the benefit of the farmers. Other aspects and stakeholders will be covered in the later stages.

1. Web interface

A web interface has been developed and uploaded on CIPT's website (www.cipt.in). It provides access to information on the cultivation of five major crops of Punjab such as paddy, wheat,

maize, sugarcane and cotton. The webpage has specific and general information on cultivation of crops in Punjabi language. There are seven categories of crop specific information which include 1) improved varieties, 2) sowing, 3) weeds, 4) fertilizers, 5) irrigation, 6) major diseases and 7) major insect-pests. The general information relates to 1) crop advisory to be issued by PAU from time to time and 2) weather information. The users or farmers can ask questions and upload their queries on the webpage by filling relevant information. Even photographs of the situations can be uploaded. The answers to the questions will be uploaded regularly on the website for the benefit of the users. The web interface will provide faster and useful information to the farmers for making improved decisions in farming and will help in conserving resource and increasing farm incomes.

2. Mobile application

While the webpage is very interactive, access to the internet connection remains a major challenge. CIPT is developing a mobile application which will contain all the crop specific information contained in the webpage. The mobile application will help those users which do not have access to internet but have an android phone and will ensure better coverage.

3. Bulk messaging

Bulk messaging is the quickest way to send urgent information to relevant users. Such a service is very useful for the farmers when farming decisions have to be adapted to quick weather changes, disease or pest outbreak and market prices. Bulk messages were sent to about 2,500 farmers in Punjab during 2013. CIPT in collaboration with the Punjab Agricultural University and Krishi Vigyan Kendras of Kheda and Anand in Gujarat are planning to target more than 12,000 farmers in Punjab and Gujarat to send them weekly crop advisories during 2014-15. These messages will be in the text and voice forms. A total of 7 lakh text messages and 2 lakh voice messages will be sent to the farmers in 2014-15. Brief reports of the text messages and voice messages delivered to the farmers during 2013 are given below.

Way Forward

The above decision support systems being promoted by CIPT in collaboration with its local partners have the potential to benefit large number of users. These will ensure faster and cost effective dissemination of information to the users, which will help them in making timely, accurate and better farming decisions. It will ultimately lead to the increase in resource productivity and income enhancement of the farmers.

Table: Report of the Text Messages sent to the farmers

S.No.	Date	Message Sent	Credits Used
1	28-02-2014 14:53	ਸਤਸ਼੍ਰੀਅਕਾਲ।ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾਵਲੋਂਹੋਣਵਾਲੇਕਸਿਨਮੇਲੇਜੇਕੇ 4 ਮਾਰਚਫਰੀਦਕੋਟ, 6 ਮਾਰਚਨਾਗਕਲਾਂਅੰਮ੍ਰਿਤਸਰ, 10 ਮਾਰਚਬਲੋਵਾਲਸੈਖੜੀ, ਹੁਸ਼ਿਆਰਪੁਰ, 12 ਮਾਰਚਗੁਰਦਾਸਪੁਰ, 14 ਅਤੇ 15 ਮਾਰਚਲੁਧਿਆਣਾ, 19 ਮਾਰਚਰੋਈਪਟਿਆਲਾਅਤੇ 21 ਮਾਰਚਬਠਿੰਡਾਵਖਿਆਉਣਲਈਤੁਹਾਨੂੰਪੁੱਲਾਸੱਦਾਦਿੱਤਾਜਾਂਦਾਹੈ।ਧੰਨਵਾਦਵਲੋਂ: ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾਅਤੇਕੋਲੰਬੀਆਵਾਟਰਸੈਂਟਰ।	2,520
2	28-02-2014 11:27	ਸਤਸ਼੍ਰੀਅਕਾਲ।ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾਵਲੋਂਹੋਣਵਾਲੇਕਸਿਨਮੇਲੇਜੇਕੇ 4 ਮਾਰਚਫਰੀਦਕੋਟ, 6 ਮਾਰਚਨਾਗਕਲਾਂਅੰਮ੍ਰਿਤਸਰ, 10 ਮਾਰਚਬਲੋਵਾਲਸੈਖੜੀ, ਹੁਸ਼ਿਆਰਪੁਰ, 12 ਮਾਰਚਗੁਰਦਾਸਪੁਰ, 14 ਅਤੇ 15 ਮਾਰਚਲੁਧਿਆਣਾ, 19 ਮਾਰਚਰੋਈਪਟਿਆਲਾਅਤੇ 21 ਮਾਰਚਬਠਿੰਡਾਵਖਿਆਉਣਲਈਤੁਹਾਨੂੰਪੁੱਲਾਸੱਦਾਦਿੱਤਾਜਾਂਦਾਹੈ।ਧੰਨਵਾਦਵਲੋਂ: ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾਅਤੇਕੋਲੰਬੀਆਵਾਟਰਸੈਂਟਰ।	6,882
3	26-02-2014 15:59	ਸਤਸ਼੍ਰੀਅਕਾਲ. ਅਗਲੇ 48 ਘੰਟੇਵਿਚਲਕੀਬਾਰਸ਼ਿਹੋਣਦੀਸੰਭਾਵਨਾਹੈ।ਧੰਨਵਾਦਵਲੋਂ: ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾ।	4,078
4	21-02-2014 16:35	ਸਤਸ਼੍ਰੀਅਕਾਲ।ਅਗਲੇ24 ਘੰਟੇਵਿਚਲਕੀਬਾਰਸ਼ਿਹੋਣਅਤੇਉਸਤੋਂਅਗਲੇਪੰਜਦਿਨਾਂਤੱਕਮੇਸਮਸਾਫ਼ਰਹੋਣਦੀਸੰਭਾਵਨਾਹੈ।ਧੰਨਵਾਦ ਵਲੋਂ: ਪੰਜਾਬਖੇਤੀਬਾੜੀਯੂਨੀਵਰਸਿਟੀਲੁਧਿਆਣਾ।	2,697

Table: Report of the Voice Messages sent to the farmers

S.No.	Date	Sender Name (OR) Reply Number	Message Sent	Credits Used
1	28-02-2014 15:51	4067299030	Voice	1,628

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