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INNOVATIONS IN DEVELOPMENT

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ASSAM AGRICULTURAL COMPETITIVENESS PROJECT

Community Procurement of Pump Sets and Using SMS for Communication

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MINISTRY OF FINANCE
DEPARTMENT OF ECONOMIC AFFAIRS

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Overview

Community Procurement of Pumps

Although Assam has an abundance of rainfall in the monsoon season and the land is fertile, farmers are unable to maximize the income from their fields because they lack access to water during the long dry winter months. This is largely because they lack the capital to invest in shallow tube wells to tap into the region's high water table and abundant groundwater.

To enable farmers to irrigate their fields in winter, the World Bank-supported Assam Agricultural Competitiveness Project sought to provide groups of 3-5 small and marginal farmers with irrigation pumps for shallow tube wells. At first, the project focused on the centralized procurement of these pumps to ensure that a large number of pumps were quickly delivered to farmers across the state at low costs.

This, however, proved to be difficult. With Assam being a northeastern state, few qualified manufacturers were willing to bid. Moreover, to ensure that the pumps were of good quality, only manufacturers who had the requisite turnover and capacity were allowed to bid, reducing the number of bidders even further. In the end, while the pumps procured were cheap, the farmers were unfamiliar with the brands on offer and the uptake of pumps was slow. The project then devised an innovative process of community procurement that allowed farmer groups to choose the pump sets themselves from a pre-selected databank. The databank was drawn up through a state selection process and listed each pump set on offer with its corresponding rate. With manufacturers of varying capacities being allowed to apply, the pump sets on offer included a choice of 25 models and 13 suppliers. Since suppliers were assured of bulk orders, they were able to offer the low prices typically associated with centralized procurement. An audit process was also devised to verify that the pumps were delivered and installed with the farmers for whom they were intended.

The community procurement process has led to a significant increase in the uptake of pumps by farmer groups. The cost of the pump sets is not only lower, farmers also receive better after-sales service because the pumps are delivered by local dealers. Based upon the success of this project, the state's Department of Agriculture has mainstreamed the process of community procurement into their regular operations.

Challenges

Although Assam has an abundance of rainfall and the state's water table is high, less than one fifth of the state's farm land has access to irrigation during the long dry season because farmers lack the capital to invest in tube wells to irrigate their fields. Thus, most of the state's cultivation – including 70 percent of its rice crop – is carried out during the monsoon season when heavy rains lash the state. Without access to water in the dry winter months, farmers are unable to increase their yields, grow additional crops or diversify away from rice cultivation.

To enable Assam's farmers to irrigate their fields during the dry season, a key element of the World Bank-supported Assam Agricultural Competitiveness Project (AACP), approved in December 2004, focused on providing groups of 3-5 small and marginal farmers with irrigation pumps for shallow tube wells (STW). A project grant covered 50 percent of the total cost of the pumps as well as their installation.

The procurement and distribution of irrigation pumps, however, proved to be a problem since the project began. While the project called for centralized procurement of these pumps through a process of International Competitive Bidding (ICB), as well as through community-based procurement, the initial emphasis was on centralized procurement to enable the quick delivery of a large number of pumps to farmer groups at low costs.

The ICB process, however, encountered a number of challenges. With Assam being a northeastern state, few qualified manufacturers were willing to bid. Moreover, in an effort to ensure that the pump sets were of good quality, the strategy required that only manufacturers with the requisite turnover and capacity be allowed to bid, thereby reducing the number of bidders even further. In addition, the strategy did not take into account the need to deliver the pumps over a large geographical area and the fact that the farmers needed to be familiar with the brands on offer.

As a result, while the pumps procured through the centralized procurement process were cheap, their uptake by farmer groups was very slow because farmers were unfamiliar with the brands. The resulting storage of pumps in warehouses led to quality issues. Even those pumps that got distributed after a significant time lag reported frequent breakdowns. These pumps also received little after-sales service from suppliers and a large number of complaints were received from farmer groups. In addition, since the project authorities controlled the centralized procurement process, suppliers became accountable to the project authorities rather than to farmer groups.

To deal with the issue of slow uptake of pumps through centralized procurement and the large number of complaints received, the project devised an innovative process of community procurement by adopting a demand-driven model. The community procurement process was based on the following principles:

First, farmer groups should be able to choose the pumps themselves from a pre-selected item/rate databank drawn up through a state selection process.

Second, the bulk purchase of pumps should lead to economies of scale whereby suppliers offer the low prices that are typically associated with centralized procurement.

Third, with large numbers of orders, suppliers should commit to provide better after-sales service for their pumps.

Fourth, an audit process to verify that pumps are delivered and installed with intended farmer groups should be introduced.

Process

To help farmer groups ensure that the pump sets met acceptable standards and were procured at reasonable prices, the project carried out the following exercise as a facilitation service to the community:

Technical Standards

Technical Standards for the pumps were set by the the state. Manufacturers and suppliers were then invited to submit the prices of their models that met these standards through an open competitive

process.

Floating of Enquiry

The Department of Agriculture published a Floating of Enquiry that sought the willingness of a range of manufacturers to sell the pumps to farmer communities at pre-determined competitive prices against laid-down technical specifications and after-sales service. After the offers were evaluated, the Director of Agriculture, Government of Assam, published a shortlist of brands and models.

Communities Choose Pumps

Communities could then procure the pumps of their choice from this list at a time of their own choosing. They could either procure the pumps from the manufacturer's local outlets or from the authorized dealers.

Communities were also allowed to select pumps from other manufacturers outside the short list, provided they received prior concurrence from the Department of Agriculture with respect to technical specifications and quality. In such cases, approval from the Department of Agriculture would only be

needed if the cost of the alternative pumps was more than 10 percent higher than the average price of the shortlisted models.

Communities contributed 50 percent of the full cost of the pumps as well as their installation costs. These included the cost of the pump, the cost of the boring the shallow tube well, as well as the cost of the materials used for boring. Communities paid their share in cash to the manufacturer's authorized dealer.

Costs

The project bore the remaining 50 percent of the cost. The project's share was released to the supplier by the Department of Agriculture. This was done once the bill was submitted along with the necessary endorsements by the concerned Assistant Executive Engineer (Agri) / Assistant Engineer (Agri) / Junior Engineer (Agri) and the leader of the farmers' group.

Monitoring

The project also developed a robust system to monitor the targeting and utilization of pumps. Ten percent of every batch of 4000 pumps distributed was reviewed through third-party institutional contracts. The review typically resulted in:

Comments and observations on the records, systems and controls that were examined during the course of verification;

Identification of deficiencies and areas of weakness in systems and controls, with recommendations for their improvement;

Reporting of the degree of compliance with each of the procurement covenants, with comments, if any, provided on the internal and external matters that affected such compliance;

Communication to the project authorities of any other matters that emerged during the verification process which might have a significant impact on the implementation of the project.

Impacts

The community procurement process resulted in :

Acceptability to the community

The community procurement process allowed manufacturers with varying capacities and sizes to apply. Thus, instead of a single supplier being selected through the ICB method, this process of selection resulted in an item/rate data bank that included 13 suppliers and 25 models for the farmer groups to choose from. This change led to a significant increase in the uptake of pumps by farmer groups.

Lower costs

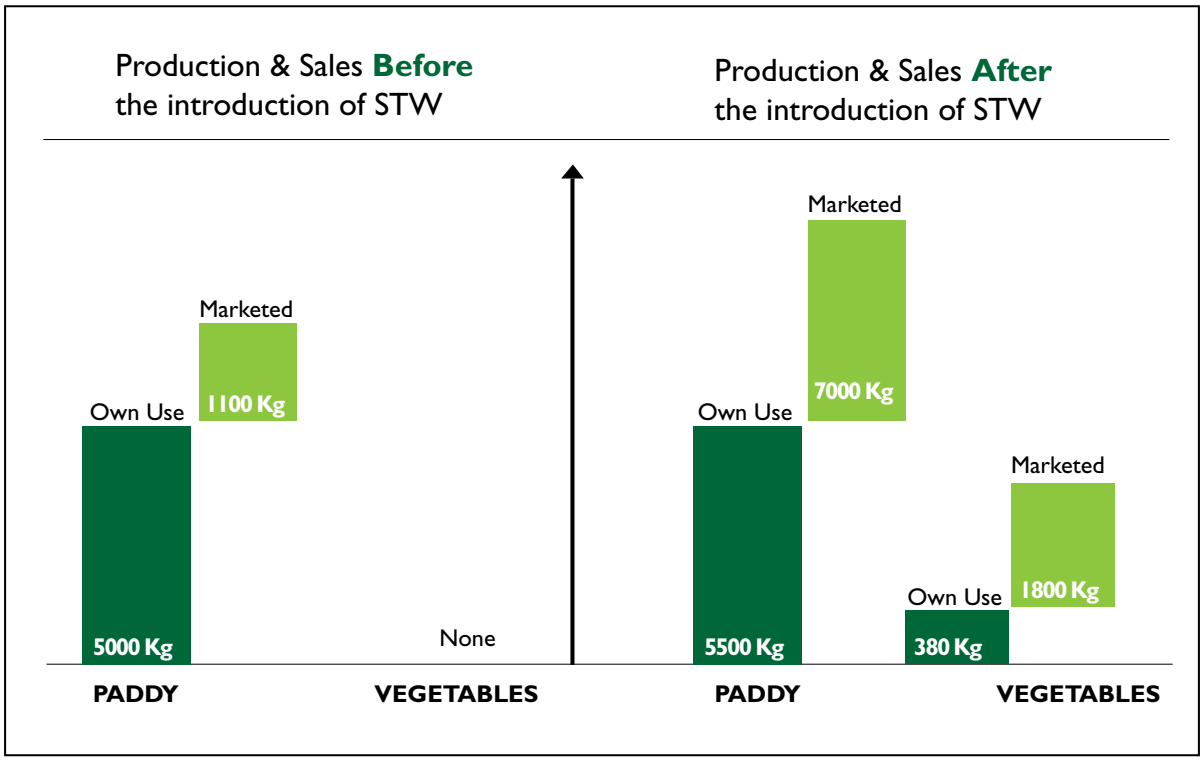
In most cases, the unit cost of pump sets showed a reduction of up to 7 percent, probably as suppliers no longer had the responsibility for their transportation and distribution across the state.

Better after-sales service

Since the pumps were delivered by the suppliers' local dealers, communities were able to ensure that they received better after-sales service.

Increase in agricultural production

The increased off -take of the shallow tube well pumps is helping farmers to increase crop production. Most of their produce is now being marketed, resulting in significant increases in farmer incomes.

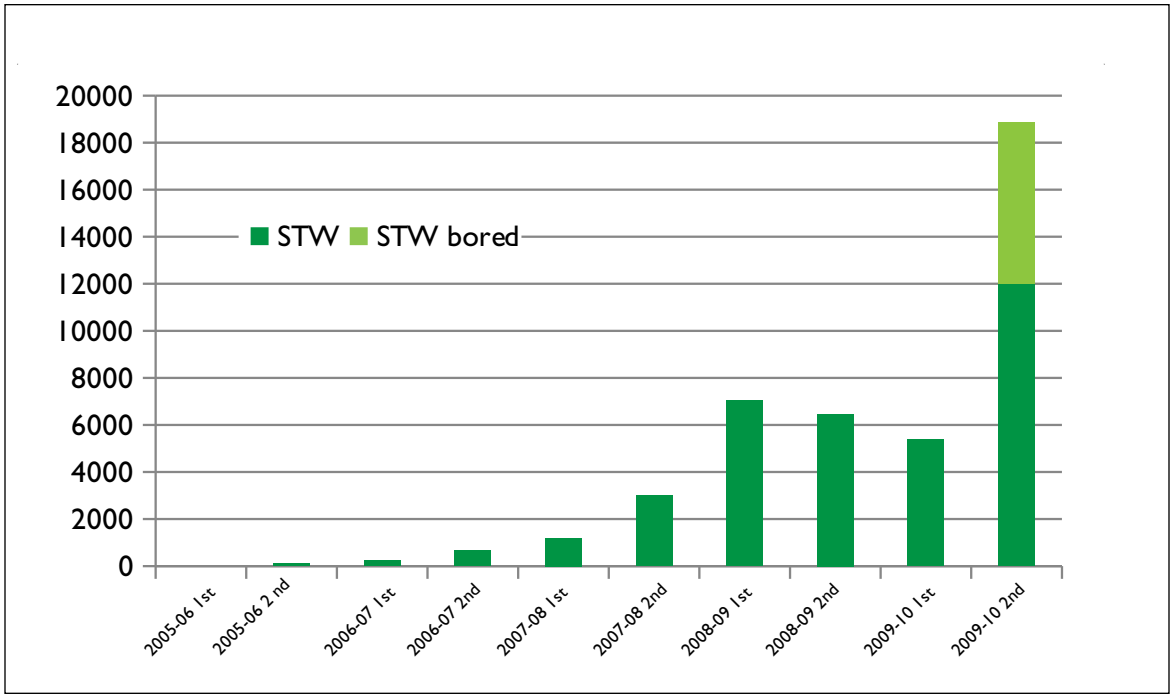


Spreading the Innovation

Building upon the success and experience gained from this project, the Government of Assam (GoA) has mainstreamed the process of community procurement for the procurement of irrigation pumps as well as for other farm machinery and equipment such as tractors and power tillers.

The state's Department of Agriculture has incorporated this process in their regular operations covering centrally sponsored schemes such as the Rashtriya Krishi Vikas Yojana and the National Food Security Mission.

Shallow Tube Wells Bored and Commissioned



Overview

Communicating through SMS

As Assam's farmers typically engage in a range of agricultural activities - growing crops, raising livestock, keeping fisheries and utilizing forest products - a large number of government departments and farmer communities across the state were involved in the implementation of the Assam Agricultural Competitiveness Project. It therefore became extremely important for the project to communicate quickly with a wide set of stakeholders in a cost-effective manner.

Accordingly, the project developed a system of sending bulk SMSs to groups of project staff and farmers through mobile phones. A database of the cell phone numbers of all concerned officials and farmers was drawn up, and different SMS recipient groups were created. The SMS system is configured in the project's web portal www.arias.in. The maintenance of the MIS system and the project's web portal has been outsourced to an outside agency.

The SMSs have now become an additional tool for the provision of agricultural extension services. They help acquaint both village-level officials as well as farmers with the varieties of seed available, crop cultivation techniques, plant diseases, methods of applying fertilizers and pesticides, market prices of crops etc. It has been found that when SMSs were used to remind farmers about meetings etc, attendance improved. SMSs are also being successfully used to follow up with ground level officials on various subjects.

It is soon planned to upgrade the system to allow for two-way communication between officials and farmers. This will allow project officials to answer farmers' queries, inform them of the daily price of farm products in specific markets, collect data on agricultural production, etc. The system will also be used to collect data from district officials on the project's physical and financial progress. This data will automatically be fed into a computer database to enable the generation of monthly reports, which will also be displayed on the project's web site. While these SMSs are presently being sent in English, efforts are on to send them in the Assamese script as well.

Challenge

Using SMS to Communicate with Farmers and Provide Extension Services

As farmers in Assam engage in a range of agricultural activities - growing crops, raising livestock, keeping fisheries and utilizing forest products - the AACP adopted an integrated approach to raising farmer incomes. However, managing a multi-sectoral demand driven project that was to be implemented by various departments (Public Works, Agriculture, Animal Husbandry and Veterinary Services, Dairy, Fisheries, and Environment and Forests) and in which communities played a very important role, required maintaining close communications with a wide set of stakeholders in a cost-effective manner. Both project staff as well as formal and informal community organizations - Common Interest Groups (CIGs), Agro-Service Groups (ASGs), Agriculture Technology and Management Agencies (ATMA), Joint Forest Management Committees (JFMC), Market Committees and Road Committees etc - needed to be kept constantly informed.

To reach this multitude of agencies and communities, the AACP developed a cost-effective SMS (Short Message Service) system through mobile phones. Leveraging new software for large-scale SMS broadcasting and the reduced costs for sending text messages, the AACP developed the ability to communicate frequently and cheaply with project staff as well as farmers.

The SMSs have become an added tool to provide extension services, particularly to acquaint village level officials and farmers with crop cultivation techniques, plant diseases, market prices, seed varieties, methods of application of fertilizer and pesticides etc.

Technical features of the web-based SMS system

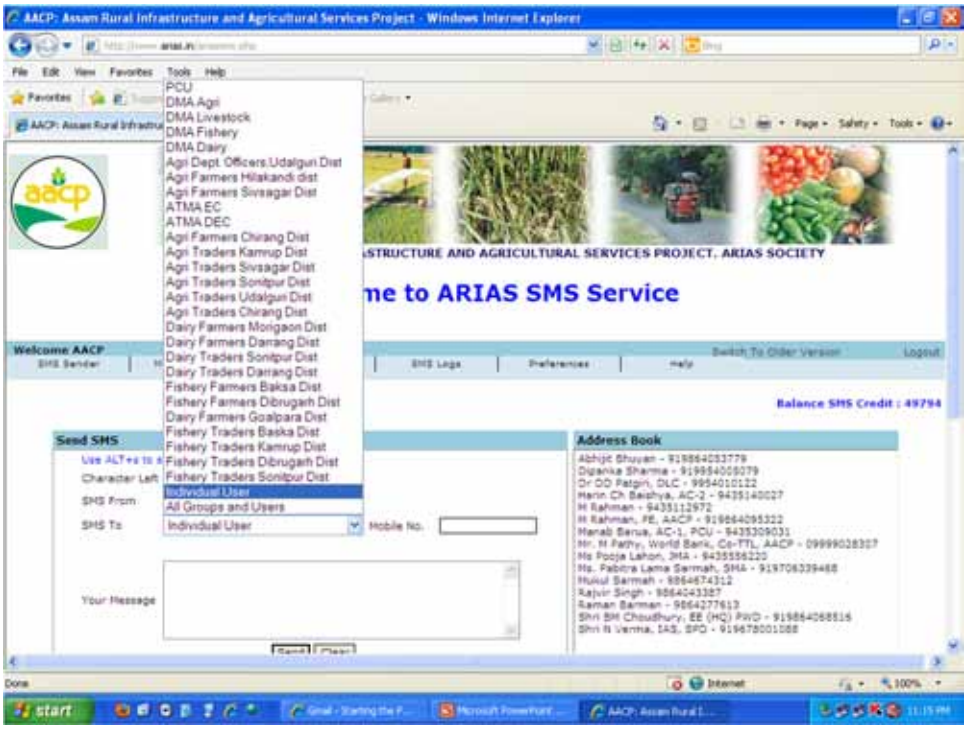
The SMS system is configured in the project's web portal www.arias.in by installing the SMS module on it. This module is used to send SMSs in the name of 'AACP' so that the receiver can identify the source of the message. A database of the cell phone numbers of all concerned officials including at the block and village level has been created.

Groups like Project Officials at HQ/District/Block/ Village level, Farmers, CIG, ATMA, Marketing etc. were created. SMSs are sent out to individual users as well as to groups.

Through the system's log files, the administrator can check the SMS's delivery status as well as its contents.

The maintenance of the MIS system and the project's web portal has been outsourced to an outside agency. The cost of sending 50,000 SMSs has not proved to be very high:

Configuration of website (one-time cost)
= Rs 27,575
Cost for 50,000 SMS with unlimited validity period
= Rs 8,272



Screen shot of the web portal of the Assam Rural Infrastructure and Agricultural Services Society: www.arias.in

Impacts

The SMS service has resulted in a number of beneficial impacts:

Key agricultural information disseminated

The SMSs served as an additional tool for extension services. For example, they alerted project officials, village level extension workers, farmers etc. about the recommended doses of fertilizers to be used for particular varieties of crops at particular times, the amount and kind of fish feed to be used for ponds of different sizes, reminded farmers not to seed banned varieties of fish, advised dairy farmers about the benefits of cultivating fodder to boost milk production, etc.

Attendance at meetings improved

When SMSs were used to remind farmers about meetings etc, and intimate them about last minute changes, attendance was found to improve.

Data collection improved

SMSs were used to remind ground level officials to submit required documents, as a follow up to letters sent to them on the subject.

Future Plans

The project team plans to upgrade the system to allow for two-way interaction between officials and farmers. Once in place, this system will be used to answer farmers' queries, inform farmers of the daily price of key farm products in certain markets, and collect data from some select farmers on agricultural production, etc. The system will also be used to collect data from district officials on the project's physical and financial progress. The data collected will be auto fed into a computer database to enable the generation of monthly reports, which will also be displayed on the project's web site. While SMSs are being sent in English at present, efforts are being made to send them in the Assamese script.

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