

Case Study

Sugarcane Information System

March 2012

Governance Knowledge Centre

Promoted by Department of Administrative Reforms
and Public Grievances
Ministry of Personnel, Public Grievances and Pensions,
Government of India
<http://indiagovernance.gov.in/>

Researched and Documented by


oneworld.net
OneWorld Foundation India
www.oneworld.net.in
owsa@oneworld.net

Table of Contents

| | |
|--|----|
| Executive Summary | 2 |
| Methodology..... | 2 |
| Background..... | 3 |
| Programme Design | 4 |
| Key Stakeholders..... | 12 |
| Work Flow | 12 |
| Funding | 14 |
| Impact..... | 14 |
| Challenges In Implementation..... | 17 |
| Conclusion | 17 |
| Annexure A - Basic information related to SIS..... | 18 |
| Annexure B – Interview Questionnaire | 19 |

Executive Summary

Sugarcane Information System (SIS) is the largest rural information technology platform in the country providing a comprehensive solution to all the needs of sugarcane farmers. Around 29 lakh farmers and their families' livelihood activities thrive on sugarcane production, and there are 125 sugar mills, in total, operating in the state. The efficiency of sugar mills also depend on interactions such as supply tickets, purchase and payments between farmers, societies and sugar mills. SIS fills communication gap to prevent loss to farmers and acts as a linkage between sugar mill and farmer interactions through three tools: a) Website b) Short Messaging Service (SMS) and Query (SMS) c) Interactive Voice Response System (IVRS). In addition, there are hand held computers at each of 7000 purchase centres. The three kinds of services are provided free of cost to all farmers. SIS has so far resulted in an annual profit of Rs 850 crores for farmers and sugar mills Rs 700 crores as per the impact study of the last two years. SIS won the gold award at the 15th National Conference on e-governance in 2012 for its exemplary service to the sugarcane farming community in Uttar Pradesh.

| Main Statistical Details of Sugarcane in the State | | | | | |
|--|---------|----------------------------|----------------------------------|---------------------------------------|----------------------------|
| S.No | Year | Sugarcane area (lakh hect) | Sugarcane production (lakh hect) | Total sugarcane crushed (lakh tonnes) | Cane price payment (crore) |
| 1. | 2010-11 | 2.101 | 1183.98 | 643.15 | 13030.99 |
| 2. | 2009-10 | 1.788 | 1051.26 | 567.34 | 13251.25 |
| 3. | 2008-09 | 2.140 | 1107.82 | 454.82 | 6298.09 |
| 4. | 2007-08 | 2.850 | 1608.59 | 747.39 | 9534.49 |
| 5. | 2006-07 | 2.662 | 1586.22 | 894.94 | 11012.34 |

Table 1 www.upcane.org/ss/en/index.asp

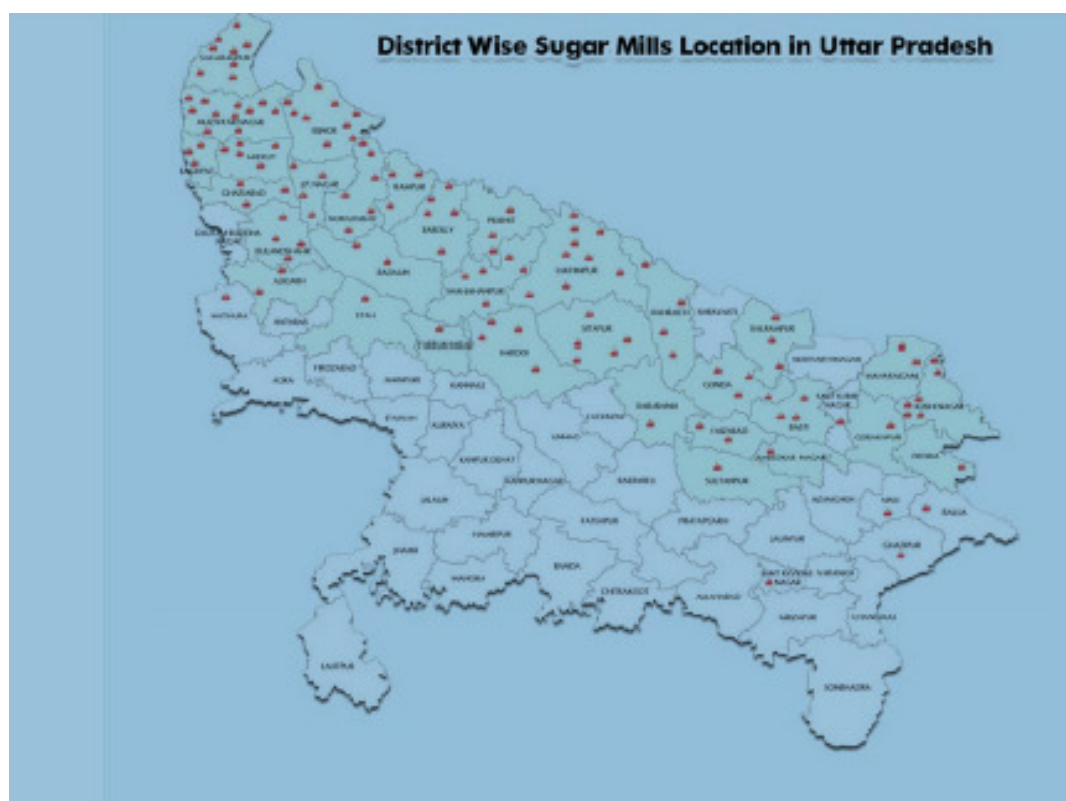
Methodology

The Research Team conducted online research to study the agricultural scenario and farmers' conditions prior to the implementation of SIS in order to understand the relevance of this project on farmers. As part of desk based research, the team had set up a telephonic interview with the UP Cane commissioner to further understand design, use of technology, challenges faced and enhancements of the programme.

Background

The farmers had faced huge losses due to lack of communication and interaction between the stakeholders and they were, sugarcane grower's societies, sugar mills and farmers themselves. The Cane Department conducted annual farmer hearings at the divisional level and the hearings were mostly complaints of non-transparency of survey data, loss/theft of supply tickets, delays in payments etc. Moreover, the farmers had to travel all the way to the mill/society offices to find out their supply ticket details.

To address the issue of lack of communication and interaction between the three key stakeholders, the UP cane department leveraged on ICT infrastructure to provide information as it was found out that almost all the sugarcane farmers had access to mobile phones and internet cafes existed within close distance to villages. The medium of mobile phones computers and internet access was utilised to streamline interaction between the stakeholders by the department. The stakeholders were then called to discuss the possibilities of transforming the situation with the help of ICT. The medium to provide the needed information was discussed in detail and the options were websites, SMS/Query SMS system and Interactive Voice Response System (IVRS).



The objective of sis can be summarised as follows:

| S.No | Objective/ SIS Feature | Description |
|------|-------------------------|--|
| a. | User convenience | Users have a choice to access information from a mobile phone, landline telephone or a computer. The information is available at the door step of the farmer |
| b. | Delivery centre | Each sugar mill is an independent delivery centre. |
| c. | Standardisation | The services provided by each sugar mill is uniform across the state |
| d. | Cost to user | Each service is free to all users |
| e. | Inclusion | All sugarcane farmers are included right from the inception |
| f. | Geographical coverage | All 44 districts are covered under SIS |
| g. | Services provided | SIS offers comprehensive information to farmers covering survey, calendar, supply tickets, cane weighing, payment, developments, achievements etc |
| h. | Query handling | SIS has this feature to handle farmers' concerns |
| i. | Timeliness and accuracy | The information is upto date, accurate and is provided automatically after each transaction |
| j. | Sustainable | The system is cost effective; easy to design and be up gradable |
| k. | Security | The information for each farmer is password protected |

Programme Design

Uttar Pradesh is the largest producer of cane in the country and the sugar industry is one of the mainstays of the state's economy. But cane farmers have always grappled with issues like getting their cane fields surveyed, selling their produce to mills, correct and timely measurement of cane, prompt payment etc. There was lack of transparency at each level and illiterate farmers faced many disadvantages. Millers also suffered at times, as due to these hassles many farmers had stopped cane cultivation or used to sell it to the local jaggery or 'khandsari' units leading to shortage of cane for mills.

UP cane commissioner mentioned that most farmers have a mobile phone or atleast have access to it with telecom services reaching remotest parts of the state. As part of the project a model website was developed and adopted by all 116 operational sugar mills in the state for 29 lakh farmers in UP. A password protected webpage for all farmers was developed. The website is supported by SMS and IVRS facility. Farmers can access all information regarding them

through either visiting the website, SMS or making a call to the IVRS number. The website is updated on time 24x7 and SMS sent out to individual farmers as soon as any transaction is done with them. All 7,000 cane purchase centres were equipped with Hand Held Computers to complete the system. This system acts as a rural information technology platform and is known as Sugarcane Information System (SIS).

The system helps farmer get instantaneous updates right from the start of the cane farming season till he receives payments for his produce. The SIS informs all farmers by sending individual SMS when the mills start operations in their area and begin buying cane. Mills only buy cane in installments and according to the date allotted to an individual farmer, so that they do not have excess stock and a situation where cane is left drying in the open leading to low recovery of sugar. But earlier the information to a farmer to bring his cane on a specific date failed to reach him most of the time, leading to a situation where he used to wait for several days at the purchase centre to sell his produce.

Now the farmer is informed through SMS or he can make a call to the IVRS and seek his details and the date of selling his produce. On the specific date cane is weighed and instantly an SMS is sent to both the farmer and mill management of the amount of cane bought and the total payment to be made to the farmer.

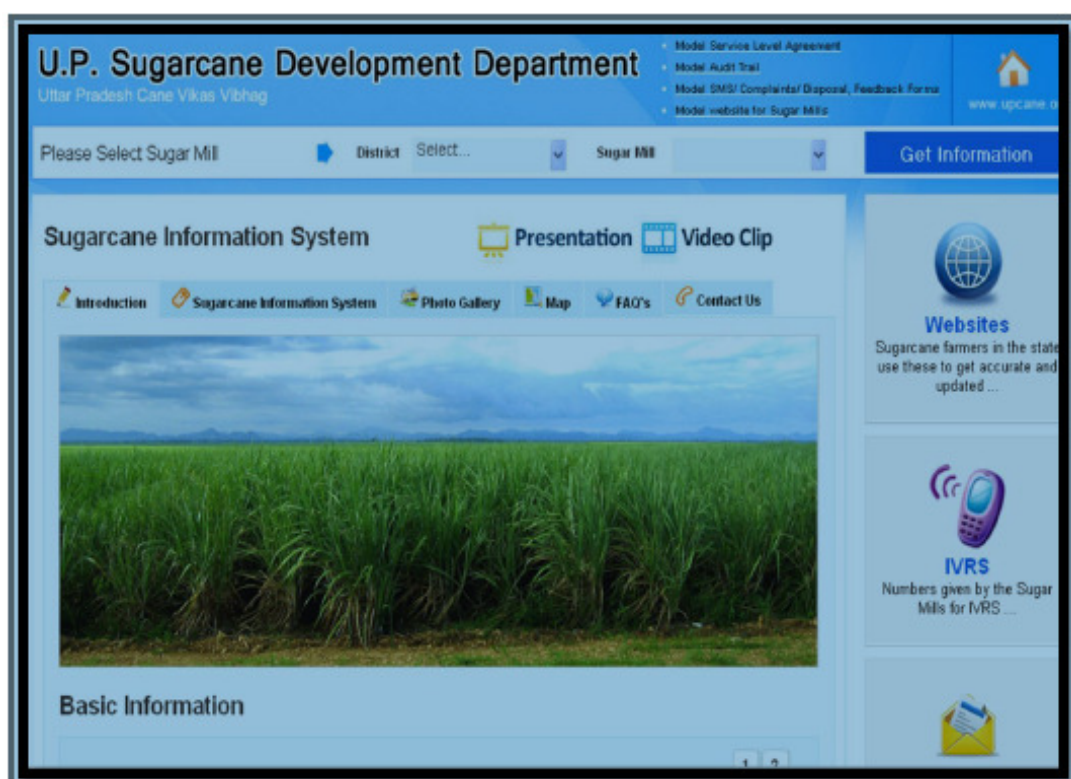
| Components of SIS | | |
|-------------------|--|--------------------------------------|
| S.No | Technology | No. Of sugar mills where implemented |
| 1. | Websites | 116 |
| 2. | SMS and Query SMS | 116 |
| 3. | Interactive Voice Response System (IVRS) | 116 |
| 4. | Hand held computers (HHC) | All 7000 purchase centres |
| 5. | Global Positioning System (GPS) | 53 mills on trial basis |

This documentation will discuss the three main components through which information is provided to farmers: a) Websites b) SMS/Query SMS and c) IVRS

Websites

Websites was chosen as a mode of communication as its comprehensive; is built as per any requirement of user and data is stored for a longer period time. All 116 sugar mills have identical, up to date and are informative; designed to guide farmers in making good decisions

regarding produce and sell of sugar cane to mills. The website has integrated the following features and gives information on: a) Mill b) mill management c) personnel of 7 cane development department d) Map/Google earth/Autocad d) photograph of mills activities e) Frequently asked questions f) Contacts g) SIS h) Date of updation i) Hit counters for 1) no. Of visitors 2) IVRS counter 3) Query SMS counter i) Cane survey j) Calendar k) Cane supply (supply of sugarcane) l) Cane payment (payment of cane price), l) SMS log & query SMS log, m) Activities of cane development department n) the policy of cane development department o)Help p) Login i) Farmer's login ii) Officer's login.



SMS/Query SMS system

The mobile numbers of 30 lakh farmers were collected to provide information using SMS. The following table illustrates the kind of SMS, frequency of interaction and number of SMS sent to farmers by the Cane department:

| Number of SMS sent to a farmer | | | |
|--------------------------------|----------------------------------|--------------------------------------|-----------------|
| S.No | Activities | Frequency of interaction with farmer | No. Of SMS sent |
| 1. | Survey of fields | 2 times | 2 |
| 2. | Calendar of supply | once | 1 |
| 3. | Start of sugar mills/centers | 2 times | 2 |
| 4. | Supply tickets | At the time of issuance of tickets | 12 |
| 5. | Weighing of sugarcane selling | According to weight | 12 |
| 6. | Payment of sugarcane price | At the time of payment | 12 |
| 7. | Development and other activities | Time to time | 12 |
| | | Total: | 53 |

Farmers can also send their queries in the form of a query SMS. The messages are standardised and sent in Hindi. All the SMS are sent within 12 hours of the transaction and is free of cost. Also, if the mobile number is shared among family members, each message is sent with the name of intended recipient.

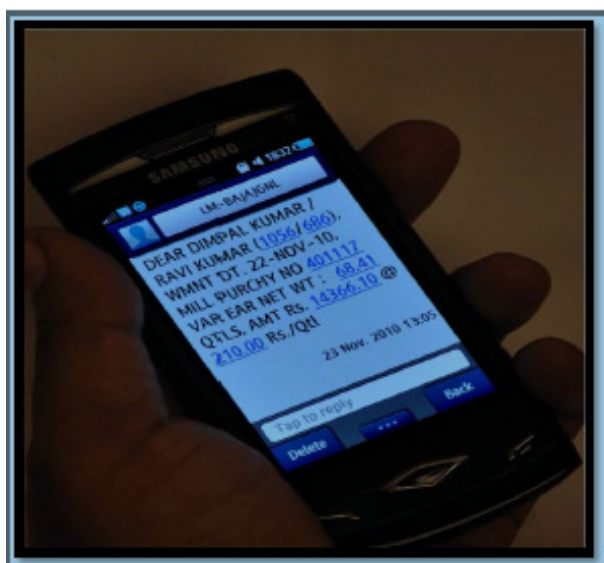


Figure 3: Cane weighing sms source: sis website

Interactive Voice Response System

The IVRS system is a crucial mode of information for farmers who cannot read or type. The farmers can dial the IVRS number and select options as per instructions and avail latest information on cane survey, issuance of supply tickets, calendar, weight of sugarcane supplied and cane price payment. All information is updated as it is directly picked up from sugar mill server.

ORGANISATIONAL CHART

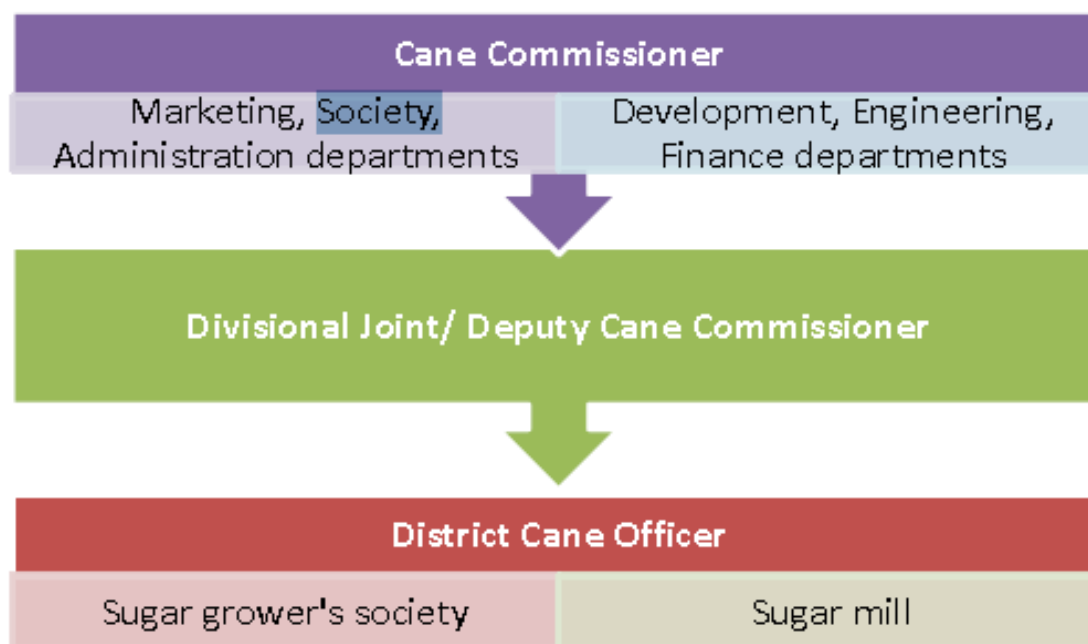


Figure 4 Extracted from user guide www.upcane/isis

Geographical spread of sugar mills

| Sl. No. | District | No. of sugar mills |
|---------|---------------------|--------------------|
| 1. | Saharanpur | 8 |
| 2. | Muzaffarnagar | 8 |
| 3. | Prabudhnagar | 3 |
| 4. | Meerut | 5 |
| 5. | Baghpat | 3 |
| 6. | Ghaziabad | 1 |
| 7. | Panschil nagar | 2 |
| 8. | Bulshandar | 4 |
| 9. | Bijnor | 9 |
| 10. | Moradabad | 4 |
| 11. | Bhimnagar | 3 |
| 12. | Rampur | 3 |
| 13. | Jyotiba Phule Nagar | 4 |
| 14. | Bareilly | 5 |
| 15. | Budaun | 2 |
| 16. | Pilibhit | 4 |

| | | |
|-----|------------------|---|
| 17. | Shahjahanpur | 4 |
| 18. | Aligarh | 2 |
| 19. | Kashiram Nagar | 1 |
| 20. | Sitapur | 5 |
| 21. | Lakhimpur | 9 |
| 22. | Hardoi | 4 |
| 23. | Farrukhabad | 1 |
| 24. | Gonda | 3 |
| 25. | Bahraich | 4 |
| 26. | alrampur | 3 |
| 27. | Faizabad | 2 |
| 28. | Ambedkarnagar | 1 |
| 29. | Barabanki | 1 |
| 30. | Sultanpur | 1 |
| 31. | Gorakhpur | 1 |
| 32. | Maharajganj | 2 |
| 33. | Basti | 4 |
| 34. | Deoria | 1 |
| 35. | Kushinagar | 6 |
| 36. | Mau | 1 |
| 37. | Balia | 1 |
| 38. | Sant Kabir Nagar | 1 |

TABLE 2 SOURCE WWW.UPCANE.ORG/PDF/USER_GUIDE.PDF

Ownership pattern of sugar mills

| Sl. No. | Name of Group | No. of sugar mills |
|---------|--|--------------------|
| 1. | Bajaj Hindustan Limited | 16 |
| 2. | Balrampur Chini Mills Limited | 11 |
| 3. | Triveni Engineering & Industries Limited | 7 |
| 4. | Birla Sugar Mills | 5 |
| 5. | Dhampur Sugar mills limited | 4 |
| 6. | Wave industries private limited | 6 |
| 7. | Indian Potash Limited | 5 |
| 8. | DCM Shriram consolidated limited | 4 |
| 9. | Simbhaoli Sugars | 3 |
| 10. | Mawana Sugar mills limited | 3 |
| 11. | Dalmia Sugars mills limited | 3 |

Table 3 Source www.upcane.org/pdf/user_guide.pdf

Interaction

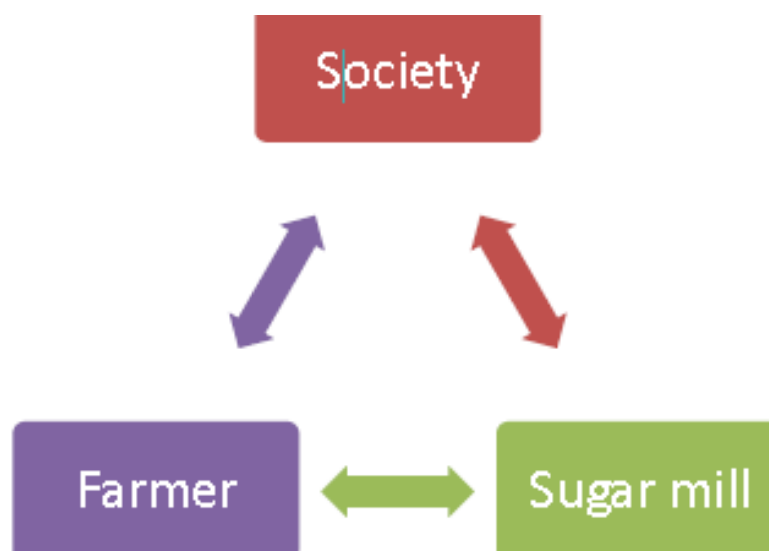
Prior to the SIS platform, there was no communication system between farmers and sugar mills or society and for every enquiry; the farmer had to travel long distance of 20-25 kms away from his home town bearing a huge problem on his time and money. The farmers had depended on the mills/ society for information related to their survey, supply ticket, weight of cane supplied, payment sent etc. The following table outlines the cost of these trips for the 29 lakh sugarcane growers:

| Cost incurred on travel to sugar mills | | | | |
|--|------------------------|--------------|----------------|------------------------|
| S. No | No. Of trips in a year | % of farmers | No. Of farmers | Total cost (in crores) |
| 1. | 12 | 50% | 14.5 lakh | 348.00 |
| 2. | 8 | 25% | 7.25 lakh | 116.00 |
| 3. | 4 | 25% | 7.25 lakh | 58.00 |
| Total cost | | | | 522.00 |

Figure 5 Table Extracted from www.upcane.org/isis

It was found out that due to lack of smooth interaction between the three agencies, farmers faced personal loss and there was a need to come up with a solution to ease communication channel between them.

The Sugarcane grower's societies are statutory autonomous bodies headed by an elected body of directors which makes all decisions related to purchase/sell, and quantity of sugarcane to be sold from farmers to sugar mills. There are 116 operational sugar mills, 168 sugarcane grower's societies and 29 lakh farmers in total. The society also provides agricultural credit and inputs to them in the form of loan recovered by sugar mills on behalf of society from the payment made to farmers for the sugarcane supplied by them. The sugar mills and society jointly survey the sugarcane area of each farmer. The sugar mills and society work in close association and the following diagram illustrates the interaction between all three agencies.



Key Stakeholders

1. Uttar Pradesh Cane department is the apex administrative body regulating policies and functions related to the sugarcane industry in the state. It makes all the important decisions regarding prices, quantity and quality of the product and overall supervises the sugarcane agencies.
2. 30 lakh sugarcane farmers have directly benefited from SIS technology platform. The communication channel between the farmers, sugarcane grower societies and sugar mills have improved to a great extent resulting in better price, quality and quantity of sugarcane. They can now avail up to date information on sugarcane and improve their livelihoods.
3. Sugarcane grower's societies are statutory elected bodies formed by UP Cooperative Act 1965.
4. Sugar Mills
5. IT providers provide technical support to the project; send SMS to farmers on sugarcane updates and update websites as well.

Work Flow

SIS is an innovative technical platform which provides uniform services to all its 29 lakh farmers from 125 sugar mills evenly spread out in 38 districts in Uttar Pradesh. The SIS technology platform is an easy medium for enquirers to navigate and get the desired information on sugar cane related queries. There are three basic steps to view information on



the homepage: First, the enquirer must select the concerned sugar mill and district in the drop down bar displayed on www.upcane.org/sis/en/index.asp. For example, by selecting 'Nanuta' sugar mill in 'Saharanpur' district and pressing 'Get Information', another link will open



Figure 5 displays websites of SIS (top) and nanuta sugar mill (bottom)

<http://upcane.org/sis/en/showlist.htm?smk=4>. Second, this new link will provide Nanuta sugar mill's website URL, IVRS number, QSMS number, numbers of installed HHC in sugar mill area and GPS. Third, the enquirer has to click on the URL http://www.upsugarfed.org/dynamic/frm_findfactory.aspx and select Nanuta sugar mill to view its home page and click on any of the icon options to attain specific information such as sugarcane survey, calendar, cane supply, payment of cane price. There is also an option for the enquirer to offer feedback, text a complaint or simply choose another sugar mill to view information. The enquirer can view information both in Hindi and English.

This section captures the actual process of the programme. Include:

- How does the programme function
- What are the main components
- How are the stakeholders involved – explain the role in detail within the process
- What resources were utilised – Infrastructure, human resources, training programmes etc.
- Monitoring and Evaluation process, if any.

Funding

The funding for operational devices is based out of UP cane department.

Impact

The sugarcane farmers have benefited from SIS system in two main ways: First, they are able to access market information from sugar mills and societies without having to waste time or make numerous travels to the offices. Instead, they are updated on market information detail via SMS, IVRS or websites. Second, they have benefited monetarily through increased quantity of sale of sugarcane to sugar mills, higher weight of supply due to fresh sugarcane, and increase in area under sugarcane.

The impact of SIS on farmers has been evaluated based on UP Cane department's study on 28 sugar mills in Meerut and Sitapur. The result of the study and the financial impact of each of these parameters is summarised below (which year?):

| Impact of SIS on the farmers | | | |
|-------------------------------------|---|------------|-----------|
| S.No. | Parameter | Before SIS | After SIS |
| a) | No. of trips of farmers to sugar mills | 16 | 4 |
| b) | Total sugarcane supplied to all the factories in the state (lakh tones) | 567.65 | 644.29 |
| c) | Increase in area under sugarcane in the state (lakh hectare) | 21.01 | 22.51 |
| d) | Increase in net productivity (tonnes/hectare) | 56.34 | 57.00 |

a. Savings in travel cost: Based on study, a total of Rs. 522 crores were spent only on travel by 29 lakh farmers as each travel had cost Rs.200 and approximately they made 12 trips a year. With SIS's support, farmers have a direct saving of Rs. 522 crores as they no longer have to visit offices to get required information.

b. Increased supply of sugarcane to the sugar mill: Previously, due to non availability of supply tickets and lack of information about supply time lines, farmers gave their produce to Khandsari/Gur manufacturers and they paid less to them. With SIS features, farmers diverted their produce to sugar mills and were paid Rs. 30 per quintal extra over that given by Gur/Khandsari units. Before SIS, cane supply (2009-10) was 567.65 lakh tonnes and during SIS, the supply increased to 644.29 lakh tonnes in 2010-11. An amount of 76.64 lakh tonnes was the increase in cane supply after the implementation of SIS. Farmers have also benefited an additional income of Rs. 45.98 crores by way of supply to sugar mills¹.

c. Increase in area under sugarcane: Sugarcane cultivation offers Rs.6000 per hectare extra over other crops but due to its perishable nature and difficulty in selling it to sugar mills, farmers were hesitant in sugarcane cultivation. With SIS, they are confident to cultivate as now they have access to information and marketing chain is much more transparent. It has been estimated that 25 percent increase in area can be attributed to SIS.

- Sugarcane area (2009-10)=17.88 lakh hectares
- Sugarcane area (2010-11)=21.01 lakh hectares
- Sugarcane area (2011-12)=22.51 lakh hectares
- Average increase in area=2.32 lakh hectares
- Increase in income= (increase in area) X25%X6000 per hectare increased income from sugarcane cultivation=Rs. 34.80 hectare

d. Increasing in productivity: SIS has increased farmers' productivity as it provides advisory services on irrigation, fertilizers, pesticides and other required information via SMS that has

¹Additional income= increase in cane supply X 20 percent X Rs. 30 per quintal additional price over Gur/Khandsari units. The impact of SIS on the increased supply has been estimated at 20 percent and other factors contribute to the remaining 80 percent.

resulted in its productivity. All farmers are updated on sugarcane and market information and access to information has yielded 25 percent increase in productivity

- a) Productivity (2010-11)=56.34 tonnes/hectare
- b) Productivity (2011-12)=57.00 tonnes/hectare
- c) Increase in productivity (b-a)= 0.66 tonnes/hectare
- d) Area under sugarcane=22.51 lakh hectare cultivation in the state (2011-12)
- e) Increase in production of=148.57 lakh quintal sugarcane (cXd)
- f) Increase in income due to increase in productivity= (increase in production)X25 %X(price of sugarcane@Rs240 quintal)=Rs. 89.14 crore
- e) Higher weight due to fresh sugarcane supply: The following table summarises loss of sugar content (weight loss) at every time interval:

| Loss of weight in sugarcane with time | | |
|---------------------------------------|------------|---------------------|
| S.No | Time delay | Decline in weight % |
| 1. | 24 hours | 4.44 |
| 2. | 48 hours | 6.31 |
| 3. | 72 hours | 10.59 |
| 4. | 46 hours | 14.28 |

Farmers faced insecurities in getting supply ticket from sugar mills and this led them to harvest their crop one-two days before the anticipated time of arrival of supply ticket; eventually it resulted in reducing the sugar content of sugarcane and weight loss of the product. SIS provided exact time of arrival of supply ticket to prevent sugarcane loss and guaranteed no loss of money.

- a) Harvest supply time before SIS=48 hours
- b) Harvest to supply time after SIS=24 hours
- c) Reduction in time=24 hours
- d) Increase in weight supplied=4 percent
- e) Total sugarcane supplied (2010-11)=644.29 lakh tonnes
- f) Additional weight of sugarcane supplied=4%Xe=25.77 lakh tonnes
- g) Additional income due to timely supply of sugarcane=Additional weight of supplyX25%Xrate of sugarcane@Rs.240/-quintal)

Additional income-timely supply=Rs. 154.62 crore

| Increase in Income of farmers due to SIS | | |
|--|---|-------------------------|
| S.No | Item | Savings (Rs. Crores) |
| 1. | Savings in travel cost | 522.00 |
| 2. | Increased supply of sugarcane to sugar mills | 45.98 |
| 3. | Increase of area under sugarcane | 34.80 |
| 4. | Increase in productivity | 89.14 |
| 5. | Higher weight due to fresh sugarcane supplied | 154.62 |
| Total | | Rs. 846.54 crore |

Challenges In Implementation

The problems of farmers and sugar mills are discussed below:

Problems faced by Farmers:

- i) Prior to SIS, Sugar mills did not provide necessary information to farmers such as area under sugarcane, number of supply tickets, weight of sugarcane supplied and payments were delayed. Absence of information led to farmers' resentment and middlemen found this as an opportunity to practice corruption.
- ii) As discussed earlier, farmers spent a lot of time and money on travelling to sugar mills to get information due to lack of interaction mechanism. This resulted in unnecessary expenditure and wastage of precious time for 30 lakh sugarcane farmers.
- iii) Sugarcane loses its sugar content and weight after harvest and due to absence of reliable information. Based on UP cane department's findings, a delay of 24 hours in supply time reduces 4 percent in sugarcane weight and a financial loss of Rs. 617 crore.

Problems faced by sugar mills:

- i) Sugar mills faced loss of income when farmers could not bring sugarcane to the mills on time as fresh sugarcane' sugar content reduces with time. SIS has helped sugar mills to increase their income to Rs 193 crore by reducing 12 hours in supply time.

Conclusion

SIS provides complete transparency into the sugarcane industry benefiting farmers, sugar mills and the societies. Technological intervention has replaced the manual system of previous functionalities and improved efficacy thereby resulting in higher profits and better cane

productivity. The success of SIS can be up scaled and replicated in other states to improving living standard of targeted beneficiaries.

Research was carried out by OneWorld Foundation India (OWFI), Governance Knowledge Centre (GKC) team.

*Documentation was created by Research Associate, **Attrika Hazarika***

For further information, please contact Rajiv Tikoo, Director, OWFI at owisa@oneworld.net

Annexure A - Basic information related to SIS

1. Sugarcane survey demonstration: The Sugarcane survey conducted village-wise is called sugarcane survey demonstration. A farmer can lodge complaints regarding his cane area and sugarcane variety to the department based on the survey.
2. Precalendar: The quantity and price of sugarcane prescribed by sugar mills to farmers is based on a schedule known as precalendar.
3. Satta: The bonded quantity of suppliable sugarcane by a farmer, as per UP cane policy is called satta.
4. Calendar: At the start of crushing season, issuance of supply tickets on the basis of total satta as per fortnight and column is called calendar.
5. Puruchi (supply ticket): To fulfil the day to day crushing need of a factory, the concerned society is issued the proportional supply tickets to their members from the calendar are called Purchi.
6. Weighment: The net weight of sugarcane supplied by sugarcane farmers on the basis of supply ticket is called weighment.
7. Payment: The cane price made for sugarcane weighed, on issued supply ticket to the cane grower at the rate (per quintal) announced by the state government.

Annexure B – Interview Questionnaire

Background- Stakeholders and roles

1. According to our research, the major stakeholder in this project is :

- a) Uttar Pradesh Cane department
- b) Farmers
- c) Sugarcane grower's societies
- d) Sugar mills
- e) IT providers

i. What are their specific roles in this project?

ii. Are there any other stakeholders? If yes, who are they? What are their roles and responsibilities?

Evolution

2. SIS programme aims to facilitate interaction between farmers, sugar mills and societies in Uttar Pradesh on sugarcane's market price, cultivation, crop season and marketing scenario; giving farmers all information via a) websites b) mobile phones and c) IVRS free of cost.

i. When did the actual implementation of the programme begin?

ii. What were conditions prior to the programme implementation?

3. Apart from information on sugarcane's price, seasonal conditions, market conditions; are there any other provisions of services/information for farmers?

4. What are the innovative features of this programme? How is it different from other information systems, such as AGRISNET, created for farmers?

Workflow

5. In our background research, we found out that sugar mills developed their websites to provide information to farmers on a) supply ticket to sugarcane price payment on daily basis. Through SIS, survey based information, issue of supply ticket and cane supply are being sent to 29 lakh farmers via SMS.

i. What are the level of interactions taking place between farmers, growers' societies and sugar mills? Please explain every interaction in detail.

ii. Can you explain the purpose of supply ticket mean and why is it important for farmers?

iii. Who conducts research on farmers' queries/ provides updates and sends it to the farmers' mobile phones? How often are these queries responded to?

6. What happens if the farmers are dissatisfied with the information given?

7. What is the total number of staff and how much do they get paid for their service?

Technology

8. Who has designed the technical architecture for this project?

9. What technological tools are applied in this programme to disseminate information to the farmers? Please explain its purpose.

10. What happens to those farmers who don't have access to mobile phones, IVRS and websites? How do they benefit from this service?

11. Did you face any challenges during its implementation? If yes, what are they and how were they overcome?

Impact and Sustainability

12. Has the programme been successful in achieving all its objectives? If no, why not?

13. How has the initiative sustained itself financially? Is there a revenue generating mechanism? If not, then who is funding the project?

Measuring success

13. How have farmers reacted to this project? To what extent have they benefitted from it? Can you provide some data?

14. Are there plans to scale up the initiative? If yes, please provide details. If no, why not?