Learning Journey

IFFCO-TOKIO General Insurance Co. Ltd.

Loss Mitigation in Cattle Insurance through RFID

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Project Basics

About the project

IFFCO-Tokio General Insurance Co. Ltd. (ITGI) is piloting a cattle insurance project targeting more than 25,000 poor farmers and their families in the Indian states of Gujarat, Punjab, Maharashtra, Rajasthan and Orissa. For these farmers, livestock is one of the main sources of income, mostly from the milk produced and sold daily to milk producer cooperative societies. In this context, livestock insurance is a critical service to mitigate the loss associated with the death of the animals. However, the claims for livestock insurance are often high due to the prevalence of moral hazard and fraud, reducing the availability of affordable coverage.

This project aims to test a model to reduce fraud by using an identification device placed under the hide of the animal. The identification device is based on RFID (Radio Frequency Identification) technology. The current means of identifying the insured animal is through ear tags, which can easily be lost or removed. By reducing fraudulent claims, the technology can benefit farmers through lower premiums to reflect the reduced claims. Additionally, the technology, used to store information about livestock such as vaccinations, can support the cooperatives and milk unions to improve herd management. Another key feature of the system is ITGI’s utilization of IFFCO’s wide network of cooperative societies as distribution channels to reach the economically underprivileged rural masses. The advent of more sustainable livestock insurance can also promote greater product development, and invite other actors to enter the sector.

The “Pashu-Dhan Bima” covers death of insured cattle for a premium from three to four per cent of the sum assured (value of the cattle). The insurance product is offered as a credit-linked product for farmers or cattle owners who borrow from the Co-operative Bank or Co-operative Credit Societies. ITGI uses the network of “Bima Kendras”, IFFCO-Tokio’s micro offices to market the product. The offices are staffed by “Bima Sahayaks”, relationship executives, who educate the village co-operative society staff and the farmers about the product at the time of enrolment. All the insurance related brochures and claim process documents are made available at the village co-operative society offices.

Relationship executives are contact points for the farmers for all the issues related to the cattle insurance. They along with a veterinary doctor inspect each and every cattle before insurance. The veterinary doctor injects the RFID capsule close to an ear. The relationship executives the tag number by reading the same using the RFID reader. They then complete the following steps: explain the processes of identification and claim settlement to the household, demonstrate the identification number reading, take a photograph of the animal to identify the animal and the veterinarian issues health certificate of the cattle.

At the time of claims, the farmer has to inform the relationship executives about the death of the cattle. The executives visit the site and inspect the carcass. They identify the cattle using the RFID reader and certify the cattle. The farmer also has to submit a post mortem report, issued by a practicing veterinarian along with two photographs of the animal. The normal claim settlement process takes less than one month because of the process improvements such as RFID identification, physical verification by insurance advisor and fewer documentation requirements.
Project Summary

*Project Name:* Loss mitigation in cattle insurance through RFID  
*Project Start Date:* 1st August 2009  
*Duration:* 2 years  
*Country:* India  
*Product:* Cattle insurance through electronic identification chip technology  

The project has been completed. Detailed lessons from the project are published in a case study – *A case for livestock insurance* by Dalal et al.
### Project Updates

#### Key Indicators

**Date of pilot launch:** **August 2009**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>As of Mar 2010</th>
<th>As of Mar 2011</th>
<th>As of Oct 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of cattle insured</td>
<td>2355</td>
<td>17 435</td>
<td>28 136</td>
</tr>
<tr>
<td>Total number of beneficiaries</td>
<td>947</td>
<td>11 290</td>
<td>16 799</td>
</tr>
<tr>
<td>Growth ratio</td>
<td>0%</td>
<td>148%</td>
<td>112%</td>
</tr>
<tr>
<td>Earned premium</td>
<td>$9964</td>
<td>$93618</td>
<td>$353 901</td>
</tr>
<tr>
<td>Net income ratio</td>
<td>-456.8%</td>
<td>-65.5%</td>
<td>-18.4%</td>
</tr>
<tr>
<td>Incurred expense ratio</td>
<td>521.5%</td>
<td>122.7%</td>
<td>84.6%</td>
</tr>
<tr>
<td>Incurred claims ratio</td>
<td>35.2%</td>
<td>42.8%</td>
<td>33.8%</td>
</tr>
<tr>
<td>Number of claims paid</td>
<td>3</td>
<td>115</td>
<td>194</td>
</tr>
<tr>
<td>Claims rejection ratio</td>
<td>0%</td>
<td>4%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

#### What is happening?

**As of April 2010**

For effective implementation of the innovation technology, IFFCO-Tokio selected five sites in the states of Gujarat, Maharashtra, Punjab, Rajasthan and Orissa in India based on established linkages with milk producers’ cooperative societies and the livelihood dependence among society members on milk production. A market study was conducted with past loss data of public sector insurers sourced from various cattle insurance intermediaries. The team appointed one dedicated veterinary doctor and one project manager at the corporate office who are training field staff and other outsourced veterinary doctors, optimizing usage of funds from the original plan to recruit six doctors. Propositions were made to intermediaries in the areas of operation, followed by tie-ups with various cooperative banks and one dairy association.

After receiving product approval from the regulator, ITGI defined and circulated the process, set-up IT support with the identified vendor, clarified software specifications, and procured and dispatched RFID chips, readers and battery chargers. ITGI continues to engage stakeholders at the local level in the form of village meetings with farmers, insuring 2,355 heads of cattle up until the end of the first period of the project.
As of March 2011

As initial results of the pilot test were satisfactory, IFFCO-Tokio decided to expand the RFID-driven product to ten sites. This required training of local ITGI sales force that now spend nearly 20 per cent of their time on this project. The project now involves more than 35 IFFCO-Tokio staff as opposed to one person in 2009.

The pilot reached its target of 14,000 cattle insured over the 08.2009-3.2011 period. All policies are credit-linked.

There is still some resistance from bank staff and veterinarians who seem not to like the new fraud-free process. However, cattle owners, by and large, have accepted the new technology as the process for filing a claim is clear.

As dairy unions are not computerized the initial idea of using an integrated Livestock Management System has been dropped.

CIRM has supported IFFCO-Tokio in conducting client satisfaction research and a costing exercise that are crucial to answer learning questions of the project.

As of October 2011

After 27 months of testing IFFCO-TOKIO has successfully:
- Insured 28,136 cattle with a gross written premium of US$496,000
- Educated farmers about the benefits of the RFID technology and used it as a marketing advantage
- Monitored its processes to reduce fraud and control claims (claims ratio of 35 per cent)
- Improved the business viability of the product (combined ratio of 118 per cent)
- Improved the client value proposition through product and process changes that led to doorstep enrolment and claims services and faster claims processing
- Used the livestock product as a strategic advantage to attract new distribution partners and expand to new areas

Detailed lessons from the project are published in a case study – A case for livestock insurance by Dalal et al.
Project Lessons

On reducing moral hazard and fraud

Using RFID technology enabled IFFCO-Tokio to reduce fraud through more accurate identification of animal and changing business processes for livestock insurance. The claims for livestock insurance are often high due to the prevalence of moral hazard and fraud, reducing the availability of affordable coverage. IFFCO-Tokio is testing a model to reduce fraud by using an identification device, based on RFID technology. The lower claims ratio (35 per cent), which is more than five times less than with traditional ear tags, suggests that the new technology is working. Perhaps even more important than the technology is the change in process that IFFCO-Tokio initiated because of the technology. IFFCO-Tokio now oversees the tagging of each new animal, reducing the possibility of claims being filed for uninsured animals.

On costs, efficiency, and profitability

The RFID technology could be a cost-effective solution to make livestock insurance viable with scale. During the pilot, the expense ratio fell from 521 per cent in Phase I to 84.6 per cent in Phase III, as the initial fixed costs related to technology and project management were spread across a larger number of policies. The expense ratio of 84.6 per cent is still high, but is likely to fall as the RFID technology becomes cheaper. The cost of readers and chips has fallen by 50 per cent since the project started. The cost of readers reduced from INR 12,000 to INR 6,500 and the cost of chips fell from INR 150 to INR 80. Other insurers have started using RFID technology and the cost is likely to fall further as new technology providers enter the market.

RFID helped to understand risks and adverse selection in the context of livestock insurance. With less noise coming from fraud, IFFCO-Tokio has observed that indigenous cattle breeds are good risk and that the mortality rate is higher during summers and monsoon season. IFFCO-Tokio believes the premium should factor the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Correlation with risk</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle breed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigenous</td>
<td>-</td>
<td>Indigenous cattle especially buffaloes are hardy and suited to the Indian climate</td>
</tr>
<tr>
<td>Cross-breed</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>+</td>
<td>Higher mortality rates in hotter climates</td>
</tr>
<tr>
<td>Fraud history of region</td>
<td>+</td>
<td>Gujarat has higher fraud incidence than Orissa, for instance.</td>
</tr>
<tr>
<td>Farmer experience with cattle</td>
<td>-</td>
<td>Experienced farmers are better risks</td>
</tr>
<tr>
<td>Women involved in rearing</td>
<td>-</td>
<td>Women are better caretakers as they are attached to cattle. One public insurer liked to say, “if you want to know if the claim is genuine, go to the back of the house and see if the woman of the house is crying”</td>
</tr>
</tbody>
</table>
On client value

Contrary to previous concerns, the RFID driven cattle product is well accepted by clients. According to CIRM client satisfaction survey of 180 farmers who benefited either from the RFID or traditional product, 90 per cent of RFID product clients were very satisfied with the product while 81 per cent of traditional clients declared high satisfaction. By and large, the cattle owners are accepting the new technology as the enrollment and claims processes are clear, and despite previous concerns, the technology does not increase stress for cattle.

RFID technology and new process improved access to product as clients now enjoy doorstep service, and do not need to go some place else to enroll or to make a claim. The satisfaction survey proves that farmers understand the product well enough to benefit from it.

RFID chips and related processes improved claims experience of cattle insurance clients. All farmers who claimed were satisfied with the process. Most claims are processed within a one month period as opposed to earlier when claim settlement could take up to six months. This has happened because earlier, the ear tags were sent to the insurer. Now IFFCO-Tokio field staff goes to the field within six hours of notification to validate the claim and read the RFID chip. The information is then transferred to a claims department, who are also more likely to respond to claims quickly as they trust the technology and claims process. Previously, the claims department was slower to process cattle claims as it had doubts about whether the claims were genuine.
Next Actions

The high level of oversight and involvement has resulted in many process and product improvements. IFFCO-Tokio has been able to maintain control over the processes. This might change with scale. Scale not only means more policies, but also new types of distribution channels. It will be difficult for IFFCO-Tokio to maintain the same level of control over the process. It might need to modify its processes and introduce more decentralized decision-making. It will be interesting to track the variations in the claims and expense ratios as new approaches are tested. The lower degree of control may be offset by higher premium volume, but this is not certain, and IFFCO-Tokio will monitor these indicators closely as it moves forward.