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Photo: Flooded village in Bihar, India.
Credit: Amit Kumar

Pilot evaluation of the Index Based Flood Insurance in Bihar, India: Lessons of experiences

Technical report

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IN PARTNERSHIP WITH:



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Acronyms

AICI	Agricultural Insurance Company of India
DRR	Global Platform for Disaster Risk Reduction
FGD	Focus Group Discussions
GOB	Government of Bihar
GOI	Government of India
HH	Household
IBFI	Index Based Flood Insurance
INR	Indian Rupee
KII	Key Informant Interview
KCC	Kishan Credit Card
NDP	National Development Program
NGO	Non Governmental Organization
OBC	Other Backward Castes
PMFBY	Pradhan Mantri Fasal Bima Yojana
SC&ST	Scheduled Castes and Scheduled Tribes
SHG	Self Help Groups

Background

The economy of Bihar state is dominated by the agricultural sector, which includes about 81 percent of the 108.1 million total population, of which 52.2 percent are male and 47.8 percent are female. The state is blessed with a rich fertile soil and abundant water resources, and the area under agricultural cultivation is as high as 60 percent of the total reporting area (GoI, 2015). About 80 percent of the farmers in Bihar in 2016 were small and marginal farmers, having an average land holding of 0.4 hectares (ha)¹. Lands are usually fragmented into small pieces in several places. Therefore, sharecropping and other tenure arrangements are common for about 90 percent of the farmers in both the owner-operators and landless categories. About 17.3 percent of the population belongs to scheduled castes and scheduled tribes (SC&ST)² and 31 percent of the people are ethnic minorities (Muslims and Yadav) (GOI, 2015). The average level of literacy is 63.8 percent, with 53 percent of females and 73 percent of males being able to read and write with understanding (GoI, 2015). According to Focus Group Discussions (FGD) and the Key Informant Interviews (KII), conducted under our study, illiteracy is particularly common for those in lower castes.

A major impediment to Bihar's agriculture are the multiple and frequent disasters, predominantly floods and droughts. In North Bihar, 73.63 percent of the geographical area is considered to be prone to floods. Although only about 10-12 percentage of households are headed by women, internal migration is common, and women generally shoulder the majority of responsibilities in most households during time of disaster (Madhuri, 2016).

The Government of Bihar (GOB) with the help of Government of India (GOI) introduced and implemented various crop insurance programs, to provide protection against losses caused by fluctuations in the output of a crop from one year to another or from one crop season to another. Traditional agricultural insurances are designed to make compensation to client farmers affected by various disasters and natural calamities based on individual yield losses or damage to crops and livestock (Ahmed, 2013; Swain and Patnaik, 2016). For developing countries like India, with large numbers of smallholder farmers, measuring such individual losses would incur enormous costs for insurance companies. The index-based insurance offers an alternative in which individual assessment is not necessary. Advances in satellite technology and data analysis were integrated to develop index insurance products, which were piloted in different countries throughout the world such as India, Ethiopia, Senegal, and United States. The index insurance products help minimize the high transaction costs and have the potential to expand the reach of insurance policies to rural areas that were previously considered uninsurable (Swain and Patnaik, 2016; Smith and Watts, 2019).

The International Water Management Institute (IWMI) has developed an Index-Based Flood Insurance (IBFI) product integrating hi-tech modeling and satellite imagery (Amarnath and Sikka, 2018; Matheswaran et al. 2019). The product was pilot tested among 200 farmers in six villages of the Gaighat Block of Muzaffarpur District, Bihar during the Khariff season, 2017. This report presents the findings of the IBFI ex-post evaluation undertaken in the pilot areas in Muzaffarpur.

¹ Small farmers earn their livelihood cultivating ½ acre to 2.5 acres (1 ha), and marginal farmers cultivate less than ½ acre (0.2 ha) of land (Singh et al, 2014).

² The Scheduled Castes (SCs) and Scheduled Tribes (STs) are officially designated groups of historically disadvantaged people in India. To achieve sustainable and more inclusive growth, special concerns are needed to address the issues of the poor, the Scheduled Castes, the Scheduled Tribes, Other Backward Classes, minorities, differently abled and other marginalized groups (Source: UN India, <http://in.one.un.org/task-teams/scheduled-castes-and-scheduled-tribes>)

The findings of this study provide lessons on how index-based insurance schemes can be made more inclusive, and inform any development of a scheme for future upscaling by IWMI. The findings are based on the qualitative assessment made in April 2018 and a household survey conducted in July 2018.

Objectives of the study

The ex-post evaluation aimed to verify data collected on the ease of access to the insurance scheme by farmers with different capacities, and on the formal and informal institutions involved at the local, district, state and national levels. The fieldwork built on this narrative in a post-payout context by examining the following:

1. Farmer perceptions of the IBFI product, their understanding of the policy and the payout process.
2. Socioeconomic effects generated by the payout, potential risks to scaling, and the strengths and ways to improve the design and rollout process.
3. How the payout has been used by recipients, to what degree and which crop losses are covered, all in order to understand what areas of vulnerability are being addressed through the payout (the degree to which total economic losses are covered, and the benefits of not having to adopt a full range of coping measures as in the past).
4. Decision-making dynamics at the household level on enrolment in the insurance scheme, ownership in insurance, what to spend on, who is involved, and who within the household specifically benefits, as well as who has influence over these decisions.

Methodology

Data was collected using both qualitative and quantitative techniques. In the qualitative data collection process, KIIs and FGDs were conducted using checklists prepared separately for government institutions, local leaders/panchayat members, IBFI beneficiaries (both pay-out receivers and non-receivers), and IBFI non-beneficiaries. Separate interviews were conducted to capture disaggregated information from large, small/marginal and landless farmers, as well as women farmers. Interviews with officials from key institutions and community organizations at local and district levels were conducted to capture their perceptions of the scheme post-payout, the roles their institutions might play in the future, and how these roles could be strengthened. The list of KII and FGDs conducted during the study are listed in Annex Table 1 and 2, respectively.

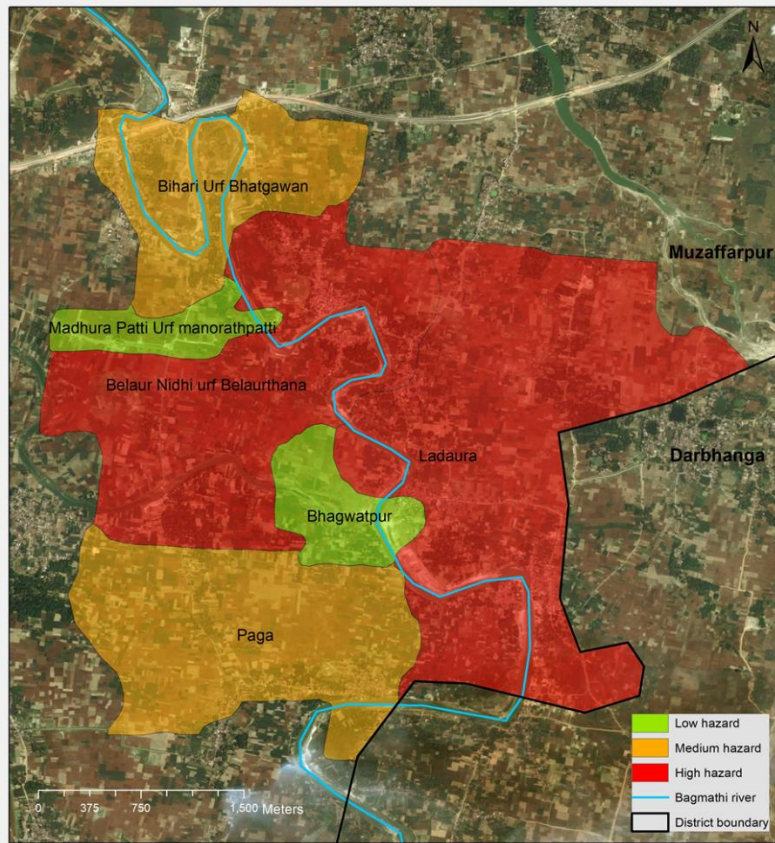
The household survey was conducted using a pre-tested questionnaire among 155 sample farmers representing all six pilot villages, illustrated in Figure 1. The detail of the sampling strategy is given in Table 1. The sample households were stratified into the following three categories with an attention to include women farmers in all three groups:

- a. Farmer households who received a payout.
- b. Farmers who had insurance but did not get a payout.
- c. Farmers who did not enroll in the insurance program.

Table 1: Sample size (number of farmers) by villages

Village name	Insured and received a pay-out	Insured, did not receive a pay-out	Not insured
Bhatgawan	19	0	10
Madhurapatti	21	0	10
Belaur	0	12	10
Paga	0	15	10
Ladaura	0	13	10
Bhagwatpur	0	15	10
Total	40	55	60

Figure 1: IBFI Pilot villages- Gaighat Block, Muzaffar District



Source: IWMI (August, 2018)

Profile of the insured farmers

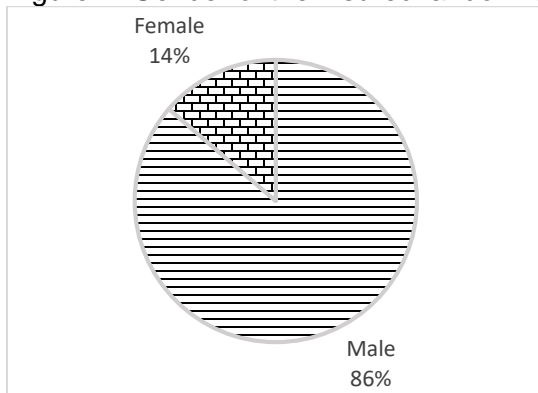
Among the selected ninety five insured farmers, 86 percent are male farmers (Figure 1); while women farmers enrolled in the program mainly belong to women headed households. According to Figure 2, the insurance program did not include farmers from less privileged scheduled castes and scheduled tribes. All the insured farmers belonged to general and other backward classes (OBC)³. However, the program had included ethnic minorities who belong to either general or

³ In the Indian constitution, OBCs are described as “socially and educationally backward classes”, and the government is enjoined to ensure their social and educational development. The castes in the general category historically enjoyed the privileges of being from an upper class. Scheduled castes (previously untouchables) and scheduled tribes (lived in tribal areas) have generally been marginalized (Source: <https://www.quora.com/What-is->

OBCs. Noting that, although we did not gather data on the type of ethnic minorities in the survey, the most common ethnic minorities in Bihar are Muslims and Yadav, and we can see a considerable number of Muslim names in the beneficiary lists provided. Almost half of the insured farmers are over 60 years old (Figure 3). The inclusion of young farmers below 45 years of age is limited to 30 percent of the total insured farmers. The majority of insured farmers are illiterate (Figure 4), indicating the need for special consideration in designing awareness program to promote the insurance product.

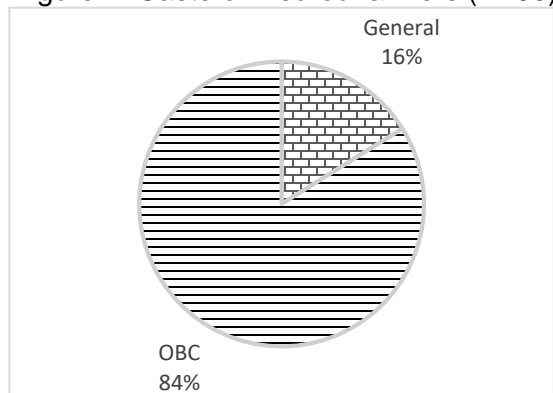
The paddy land size owned by farmers was one ha or more for about 50 percent of the insured farmers, with farmers owning land that is less than 0.5 ha only making up 15 percent of the total number of insured farmers (Figure 5). The findings indicate a bias towards comparatively larger farms in the pilot, although small and marginal farmers farm the majority of land in the area.

Figure 1: Gender of the insured landowners (N=95)



Source: Authors; survey data, 2018

Figure 2: Caste of Insured farmers (N=95)



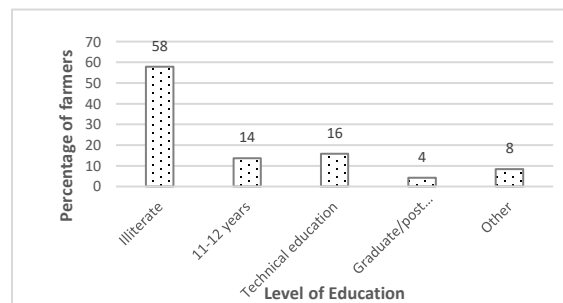
Source: Authors; survey data, 2018

Figure 3: Age of the sample farmers



Source: Authors; survey data, 2018.

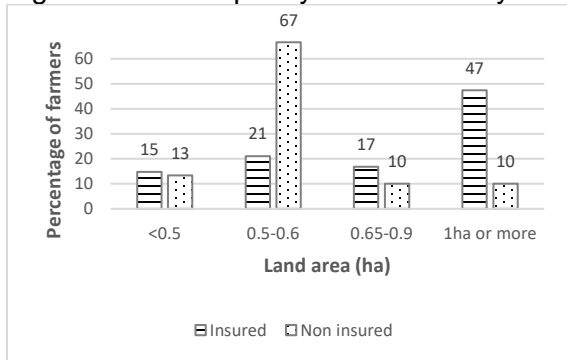
Figure 4: Level of education of insured farmers (N=95)



Source: Authors; survey data, 2018.

the-difference-between-scheduled-caste-SC-and-scheduled-tribe-ST-How-government-has-classified-tribes-and-caste-into-it).

Figure 5: Area of paddy land owned by the sample farmers (N=155)



Source: Authors; survey data, 2018.

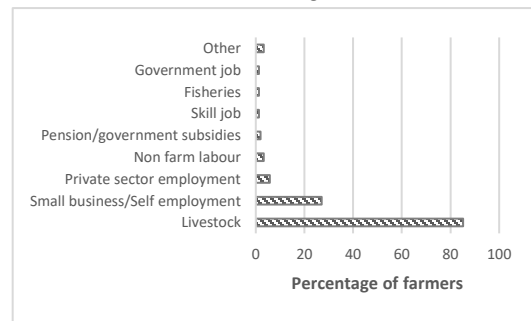
The majority of households are large, having more than five members in 76 percent of the total households (Figure 6). Agriculture is the primary livelihoods activity for most of the members of the households. As per survey findings, the primary source of income for all the sample households is agriculture, which is consistent with what we know about farmers in the area (GOB, 2015). The dependency of farmers on non-farm income sources is very limited in the area, even as a secondary income source. The major source of secondary income for 85 percent of the sample households is livestock (cattle) (Figure 7), which is also vulnerable to floods.

Figure 6: Household size and number of family sample farmers (N=155)



Source: Authors; survey data, 2018.

Figure 7: Secondary source of income of the members involved in agriculture



Source: Authors; survey data, 2018.

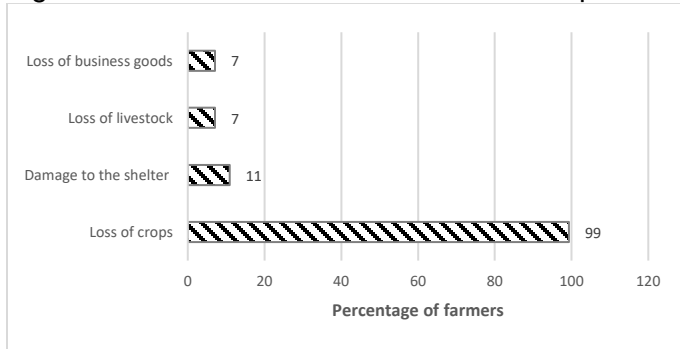
Note: Multiple answers to the question gives more than 100 percent of added value

Weather risk and methods of adaptation

Rice is cultivated in the Kharif season from mid-July to November. Floods are the main weather related disaster experienced during this period and constitute the major production risk for rice farmers in Northern Bihar, although droughts have also occurred in some years. Floods occur due to intense rainfall and river overflow from upstream catchments in Nepal. Farmers in the pilot areas have experienced three major floods during the last five years in the months of July/August, causing severe yield losses. The flood height in the paddy field during the flood that occurred in August of 2017 was 6-10 feet (ft) (1.8–3 m) and submerged the rice crop for 15-25 days, leading to total crop damage. The rice was in its growing stage (between 15 days and 2.5 months age) at

the time of the flood. Almost all farmers experienced crop damages according to the survey (Figure 8). In addition, damage to shelter and loss of livestock was also reported.

Figure 8: Economic effects of 2017 flood as perceived by sample farmers (N=155)



Source: Authors; survey data, 2018.

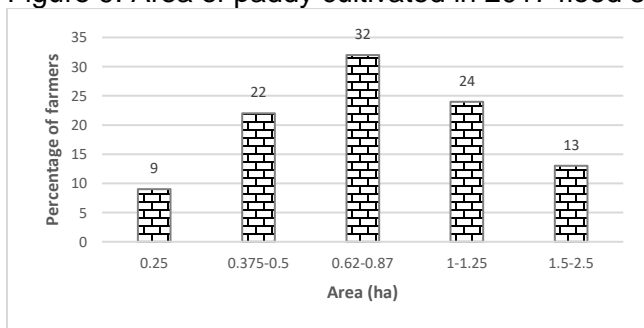
Note: Multiple answers to the question gives more than 100 percent of the added value.

Farmers are not used to practicing any adaptation measures in their cultivation to minimize damages from floods. Most farmers prefer to avoid cultivation if there is a flood forecast. Although flood-tolerant rice varieties could withstand submerged condition up to 15 days without yield reduction, the survey findings shows that adoption has been limited to 12 percent of farmers. The main barrier to adoption is that farmers perceive that this variety has an extended duration and therefore delays the winter season (Rabi) cultivation.

Cost and return of paddy cultivation

The area of paddy cultivated during the 2017 Kharif season by the insured farmers is illustrated in Figure 9. About 37 percent of the insured farmers had cultivated one ha or more and their total loss should be much higher given the insurance coverage was limited to maximum of one ha. According to the survey findings, the average cost of cultivation during 2017 Kharif season was Indian Rupees (INR) 32,640 per ha of paddy. This is in the range of the cost of cultivation gathered in the qualitative assessment (INR 30,000-35,000/ha). A similar estimate (INR 33,350/ha) was reported earlier by Pavithra et al. (2018) based on 2013/14 data in Bihar. The cost of production for marginal farmers is lower due to the practice of low input agriculture, but they receive a lower yield. The average paddy yield in a normal year is between 3,800 to 4,500 kilogram (kg) per ha. Paddy cultivated in the highlands provides relatively higher yield and better quality product than the lowland paddies. The average paddy marketing price (unhusked rice) in 2017 was INR 14 per kg. This is expected to generate a gross income of INR 53,200 to 63,000 per ha of cultivation. The net return would therefore be INR 20,560 to INR 30,360 per ha.

Figure 9: Area of paddy cultivated in 2017 flood season as per insured farmers (N=95)

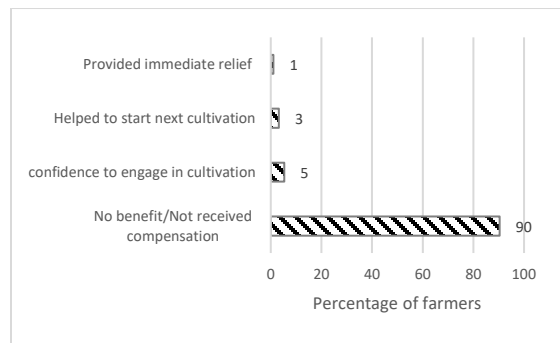


Source: Authors; survey data, 2018.

Risk transfer through insurance: past experiences

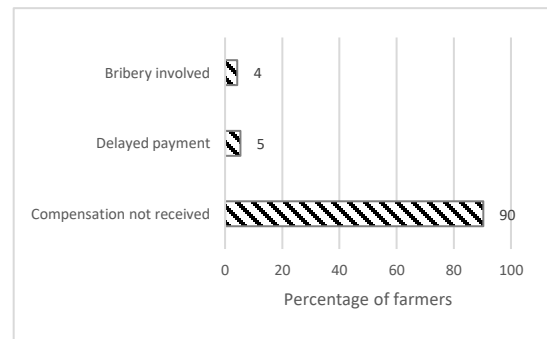
According to the FGDs and KIIs, it appeared that the awareness of crop insurance in the area was relatively low. The government has introduced different crop insurance programs from time to time, with the latest subsidized crop insurance scheme, called the “Pradhan Mantri Fasal Bima Yojana (PMFBY),” having been implemented until mid-2018 jointly by GOI and GOB. In our sample, 93 farmers had past experience with the PMFBY. Out of these 93 farmers, 92 were beneficiaries of IBFI. The major benefit reported by those who had received compensation in the past was that they were able to confidently continue the next season’s cultivation in the case of those who received compensation (Figure 10). However, 90 percent of the farmers who had been insured under the PMFBY had failed to receive any compensation. Those who had received payment (the remaining 10 percent) did not receive the payment in a timely manner (Figure 11). It was also reported that there were some incidents of bribery when receiving the compensation from the earlier crop insurance schemes. Lack of awareness and low levels of literacy led to them being forced to pay bribes when receiving compensation.

Figure 10: Benefits of past insurance programs (N=93)



Source: Authors; survey data, 2018.

Figure 11: Limitations of past insurances (N=93)



Source: Authors; survey data, 2018.

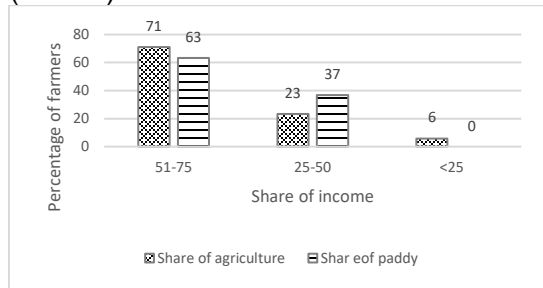
It was reported in the FGDs that about 10-15 percent of the farmers, mostly large farmers, have a Kishan Credit Card (KCC)⁴ that allows them to obtain agricultural credit from formal sources. It is compulsory for farmers who possess a KCC, known as Loanee farmers, to be part of this crop insurance scheme. Farmers are auto debited for the insurance premium at the time of obtaining the loan. The survey findings show that out of the 155 sample farmers, only 40 farmers had a KCC. Out of the KCC holders, 38 were beneficiaries under the IBFI. However, the KCC farmers reported that, though there is an auto debit for crop insurance, compensation was not paid after 2015. It appeared that the insurer was unable to settle the claims due to failure to disburse compensation at the agreed premium by the state government. Two KCC Loanee farmers were not even aware that they were part of the insurance program.

⁴ The Kisan Credit Card (KCC) loan scheme was introduced by Indian Banks with the aim of providing short term credit facilities to farmers.

Impact of 2017 flood damage to the paddy crop and household income

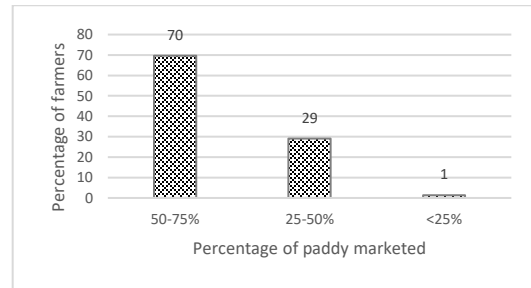
Agriculture contributes 25-75 percent of the total household income for 94 percent of the insured farmers, and is the primary income source (Figure 12). According to Figure 12, paddy cultivation plays a dominant role in providing income to households. This is further confirmed by Figure 13, which shows that the majority of farmers are taking a large portion of the paddy crop to the market to earn cash income for household expenditures. Therefore, damages to the paddy crop are a major setback to household income.

Figure 12: Contribution of agriculture and paddy cultivation to total household income (N=155)



Source: Authors; survey data, 2018.

Figure 13: Share of total paddy marketed (N=155)



Source: Authors; survey data, 2018.

The flood that occurred in August 2017 caused complete crop damage to the majority of farmer paddies, bringing about serious financial loss and lack of working capital to start next season cultivation for the farmers. A few of the farmer paddies had a partial yield, but it was mostly of low quality, selling at a 40-50 percent lower market price. The major coping strategy adopted by farmers to deal with floods is to use savings to meet the immediate expenses (Figure 14).

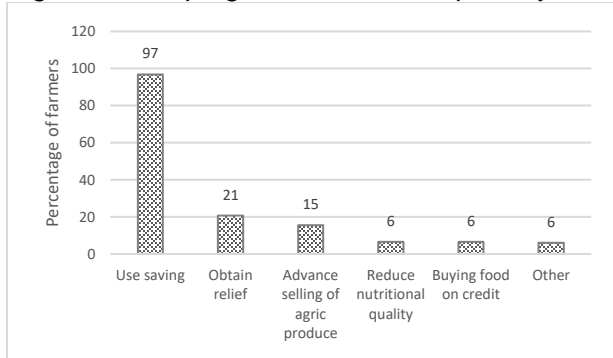
Depending on relief from the government and Non Governmental Organizations (NGO) is also a key coping mechanisms in the area, but relief was restricted to selected vulnerable people. Beneficiaries of the government relief program are selected through a community meeting organized by the monitoring and evaluation committee of Gram Panchayat. NGOs have their own criteria and have field level officers to select target beneficiaries, especially from the vulnerable segments of the community. The government has provided a cash grant of INR 6,000 for selected flood-affected vulnerable households from a climate relief fund. In addition, some NGOs such as Oxfam India have provided input support (seeds and fertilizers) for vulnerable people to help them commence the next season's cultivation.

As most households are rearing livestock, income earned from livestock has provided a cushioning effect for households during the post-flood period. Sales of cattle also take place to meet emergency cash requirements. Most farmers were forced to borrow money from informal sources at high-interest rates to pay off their debts and start the next season's cultivation. Some farmers received a loan from Self Help Groups (SHGs) through the women members of the households.

FGDs and KII revealed that, in the absence of agricultural activities due to flood, landless laborers lose their daily wage opportunities in flood-affected villages, and their households suffer the most. Male members of both landed and landless households generally chose to migrate to neighboring states in search for urban and agricultural wage labor opportunities. Farmers usually migrate to other areas to earn the capital required to start the winter season cultivation that provides a significant portion of the total annual household income. According to the survey findings, out of

total annual agricultural income, Kharif season paddy cultivation provides around 25-50 percent for 80 percent of the farmers and the rest comes from high-value winter crops. Post-flood Rabi/winter seasons are usually very successful and provide a bumper harvest due to increased soil moisture and enhanced soil fertility from sedimentation. Wheat, maize, and vegetables such as Brinjal (eggplant), okra, tomato, cucumber, and cauliflower are the most popular Rabi crops.

Figure 14: Coping mechanism adopted by the sample farmers in the post-flood period



Source: Authors; survey data, 2018.

Note: Multiple answers to the question gives more than 100 percent of the added value.

Awareness and perception on IBFI

The Agricultural Insurance Company of India (AICI) initiated the IBFI rollout process in the six pilot villages. The selected villages are located on both banks of the Baghmata River, representing low risk, medium risk and high risk areas with regard to floods. The selection of pilot villages was completed by May 17, 2017 and the rollout process of IBFI for the 200 farmers was completed within 12 days during the period of July 10 - 22 2017. Prior to the commencement of enrolment, AICI held a meeting in each selected village to disseminate the information about the eligibility criteria, product features, premium rates, documents required and claim settlement procedure to the farmers. The rate of premium varied for different risk levels.

The farmers had to provide copies of any proof of identity (Voter card, Aadhar card⁵, driving license, etc.), proof of address (Voter card, Aadhar card, etc.), land receipt to prove the cultivation of land, and bank account number to enroll in the program. Selection of farmers was done on the basis of eligibility criteria laid down by the AICI with the support of gram panchayat head. Since the pilot was limited to 200 farmers and was rolled out on a first-come-first-serve basis, farmers who had all the documents and some past experience in crop insurance joined the program within the short period of time. Some farmers, who had land document but no bank accounts, joined the scheme through their spouse’s bank accounts. Some farmers, who were unable to attend the meetings or had internally migrated, did not learn about the product. After the selection of farmers, social mobilizers visited the selected houses to complete the enrollment, assisting them with the application process and collecting the required documents. The AICI then collected the documents from the mobilizers for further processing.

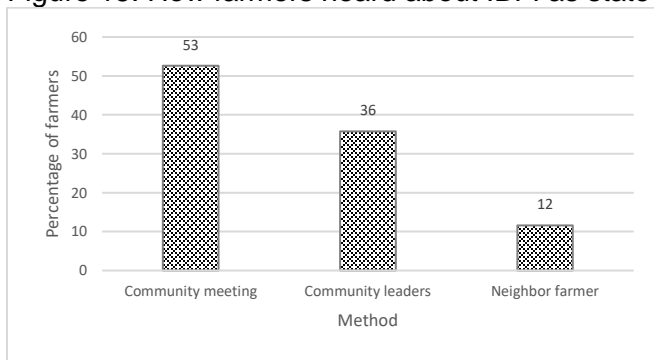
The project attempted through individual farmer meetings and community meetings to make farmers aware of the terms and conditions attached to the insurance product before they signed the IBFI contract, including the details of the threshold to receive the payment in the event of flooding. The community group meetings were organized to inform farmers of the nature of the

⁵ Aadhaar is a identity system based on biometric and demographic information with 12-digit unique identity number

product, including the methodology that would be followed during the entire process. Individual meetings through personal contacts and community group meetings were used to create awareness about IBFI and promote the product during the month of July 2017. Village/baseline surveys conducted for IBFI in 2016 also recognized the extant crop insurance in the pilot area. The levels of understanding differed across the villages and the communities, mainly depending on literacy and prior knowledge of insurance. Literacy levels were lower for people belonging to lower castes, small and marginal farmers and landless farmers, for whom face-to-face discussions were a more effective method of communication.

Figure 15 shows how the insured farmers came to know about IBFI. According to the figure, about 50 percent of the beneficiary farmers received the information through the community meetings conducted by the project. Community leaders also played a key role in dispatching the information among the farmers who were accessible to them.

Figure 15: How farmers heard about IBFI as stated by the insured farmers (N=95)



Source: Authors; survey data, 2018.

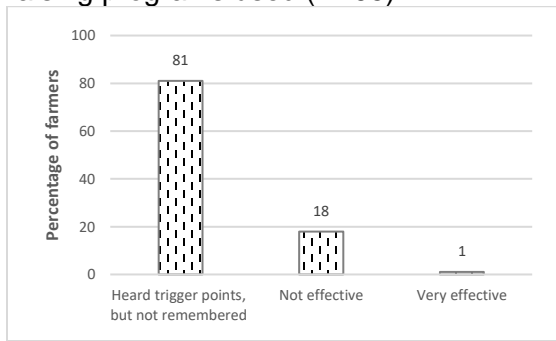
Farmer perception about the effectiveness of the awareness-raising program conducted by the project is shown in Figure 16. The key message was that, while farmers participated in awareness-raising activities, these were not sufficient to make them understand the product, especially on how and under what scenarios the payout would be triggered. Farmers admitted that they were informed about the trigger points, but were unable to remember the process given the complex nature of the product. De Silva and Aheeyar, (2017) reported similar findings from the experiences of an ADB funded weather insurance product piloted by National Development Program in Sirajganj District, Bangladesh; where despite conducting a series of awareness-raising programs, it appeared that the level of farmer understanding about how the product worked was very general and lacked specificity about what exact scenarios would trigger a payout. This shows the difficulties in getting farmers to understand an index insurance product within a short period and shows that a long-term learning process for both the farmers and the project is necessary. The process needs to adopt appropriate tools to make the community understand the product clearly.

Given the large numbers of illiterate farmers, promotional video was the most effective tool for creating awareness about the IBFI product (Figure 17). Ensuring a good understanding of the IBFI product is important to avoid or minimize the development of mistrust and displeasure. In addition, consistent with our findings in Bangladesh, if women are part of the Household (HH) discussion about participating in the project, they need to have as much information about the product as men. If there are gender norms that limit women’s mobility, and/or if their literacy levels are lower than men’s, these issues need to be addressed. In Bangladesh, the third party flood

insurance scheme implemented by Oxfam recognized the situation that women were in and took the time to target them as an audience, showing street dramas and a video in places in the community that were accessible to women.

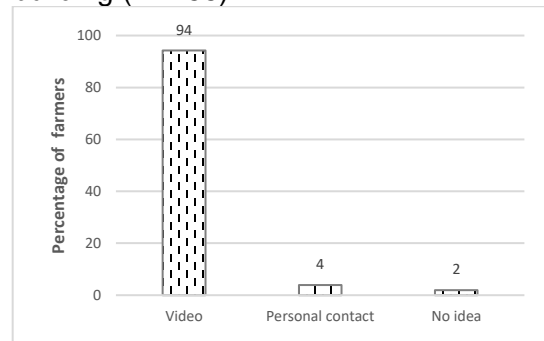
The interviews revealed that there was discontent among the farmers who were insured but did not receive a pay-out or only received partial compensation. The project attributes this discontent to a lack of understanding and clarity about the trigger points and the payment process, not related to the product itself. As such, it is critical that the project considers strategies that would enhance the trust of farmers in the product, as well as an understanding of the trigger points and the payment process adopted by the project.

Figure 16: Effectiveness of the awareness raising programs used (N=95)



Source: Authors; survey data, 2018.

Figure 17: Preferred tools for awareness building (N=155)

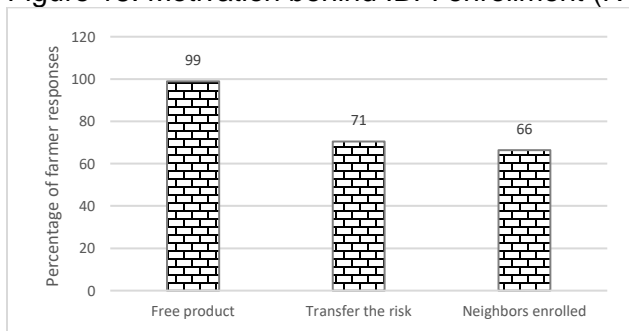


Source: Authors; survey data, 2018.

Features of IBFI product and the payout process

IBFI covers the Kharif season paddy crop up to a maximum of one ha per beneficiary. The limitation on land coverage was set to allow a maximum number of farmers (200) to enroll in the program given the limited subsidy available. The limitation was also expected to prevent farmers with larger land holding to get more benefits, thereby including small-holder farmers. All insured farmers were asked why they enrolled in the IBFI project (Figure 18). Although 70 percent of the farmers perceived the insurance as a risk transfer tool, almost all of the farmers enrolled because of the subsidized nature of the product, indicating their insufficient understanding of the broader concept of insurance and their limited insurance literacy.

Figure 18: Motivation behind IBFI enrollment (N=95)



Source: Authors; survey data, 2018.

Note: Multiple answers to the question gives more than 100 percent of the added value.

The sum insured amount was INR 20,000 per ha, which is considerably lower than both investment cost and the value of crop produced. Payout triggers were predetermined based on flood height and duration of inundation. Satellite data on flood inundation, river water levels, and rainfall data were collected to determine the trigger points for compensation payment after a ground level verification exercise. The premium was calculated at 9.5 percent of the insured amount plus taxes.

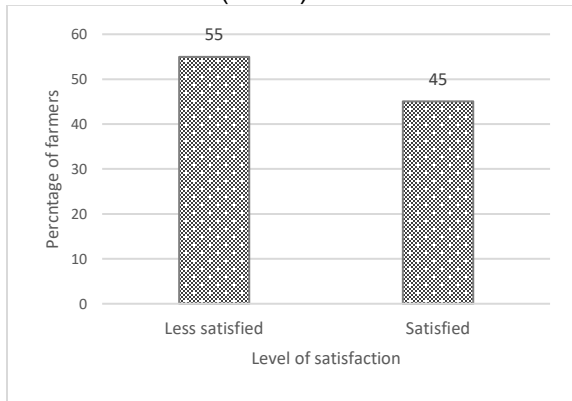
The 2017 flood triggered a payout in two of the pilot villages. There were 43 farmers in total who received compensation. All the 19 insured farmers in the Bhatgama village received the 100 percent of the insured amount, while all 24 insured farmers in the Madhurapatti received 35 percent of the insured amount. The compensation amount received by farmers in a village was the same despite the actual damage suffered as the Insurance payment is triggered by the weather index crossing a given threshold signalling disaster, not by individual loss assessment. The remaining 157 farmers in the other four villages received no compensation. This was because flood levels in those villages did not reach the trigger points set by the project in those villages. The compensation amount was directly transferred to the individual bank accounts with no involvement of intermediaries. Farmers preferred and appreciated the direct bank transfer, given their experiences dealing with banks that required illiterate and less influential farmers to pay commissions and bribes to process the payments. However, the time lag of four months to transfer the money to the farmer's bank account was too late for the farmers to pay for their next season's inputs and pay-off the previous seasons debts. The delay occurred partly because a state level pay-out ceremony was arranged in order to promote larger awareness for policy relevance in Global Platform for Disaster Risk Reduction (DRR) and Crop insurance with the participation of Union and State Agriculture Ministers.

Farmer perceptions of IBFI after the payout

Farmers in the payout villages, both beneficiary and non-beneficiary, were satisfied with the payout and were willing to continue in the program, even with reduced subsidies and financial contributions from the farmers. All the farmers were completely satisfied with the type of risk (flood) covered by the IBFI, although drought also occurs in the area. About 90 percent of the sample farmers, both insured and uninsured, prefer receiving compensation payment directly to their bank accounts, while the remaining 10 percent prefer direct payment to them. All the payment receivers accepted that the payout amount was fair across the farmers. About 80 percent of the insured farmers were fully satisfied with the sum insured (INR 20,000/ha), while 20 percent of the farmers proposed to increase the sum insured amount and were less satisfied. All farmers were satisfied with the amount of coverage (INR 20,000/ha), but some were less satisfied with the extent of land covered (maximum of one ha) by IBFI, as they are all operating on more than one ha of land. About 45 percent of the farmers were satisfied with the limited extent of the coverage, primarily because they are smallholders that only have 1 ha or less of land (Figure 19).

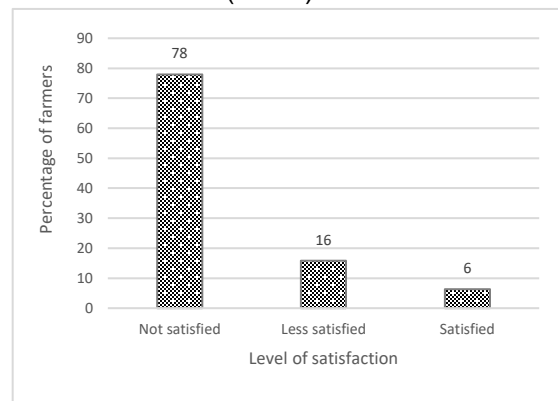
These findings again show that these types of projects should pay more attention to selecting small and marginal farmers. The level of satisfaction with the explanation/clarity provided about the IBFI product through awareness programs was less than satisfactory for about 80 percent of the insured farmers (Figure 20), indicating the need to rethink the strategy on community mobilization and awareness building. Only 6 percent of farmers were satisfied with the clarity provided on the insurance product.

Figure 19: Level of satisfaction in the area covered by the IBFI as perceived by insured farmers (N=91)



Source: Authors; survey data, 2018.

Figure 20: Level of satisfaction on clarity provided on the IBFI product as perceived by insured farmers (N=95)



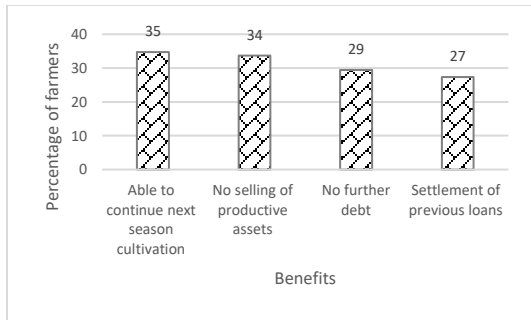
Source: Authors; survey data, 2018.

Payouts made in the pilot villages created considerable interest among the non-insured farmers, who became interested in joining the scheme once they saw the benefits enjoyed by participating members of their communities. These non-insured farmers had not heard about the product during the initial pilot and therefore were not enrolled. It appeared that the farmers interviewed from insured villages that did not receive a pay out were unhappy about the clarity of the scheme and had difficulty in understanding the method adopted to make compensation payment using satellite data. This misunderstanding demonstrates the need to educate further and create awareness among the farmers in terms of how the IBFI product operates and how payments are determined. In other words, such insurance schemes need to be understood as iterative processes in which farmers gradually understand the technicalities and the project improves its ability to communicate complex and novel mechanisms to them.

Impacts of IBFI pay-out

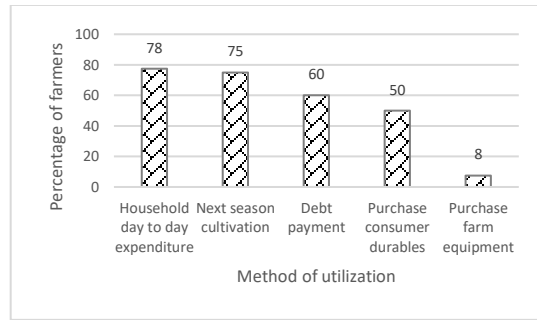
For the 40 insured farmers who received an insurance payout, the immediate benefit was their ability to re-invest the compensation in the following season's cultivation without losing their productive assets. The investment in the post-flood season (winter) is the most important part of their annual livelihood cycle (Figures 21 and 22). The settlement of the previous loan without falling into further debt was another important immediate benefit, one that helped them continue the next season's cultivation without trouble or delay. The majority of the beneficiaries used the payout for multiple purposes, including expenditures for some essential daily needs. Some farmers utilized the money to purchase livelihood assets such as livestock (cows) and farm equipment.

Figure 21: Immediate benefits of IBFI pay-out (N=40)



Source: Authors; survey data, 2018

Figure 22: Method of utilization of insurance pay-out (N=40)



Source: Authors; survey data, 2018.

During the post-flood winter season, neither non-insured farmers nor insured farmers, who did not receive a payout, cultivated winter paddies. However, three farmers who had received the pay-out did. All of the farmers, irrespective of insurance coverage, cultivated winter wheat, an assured source of income for farmers in the area. The IBFI project has also provided flood resistant wheat and vegetable seed varieties to the insurance beneficiaries in the pilot villages to promote post flood recovery opportunities and to create additional livelihood benefits that address climate resilient agriculture. The extent of winter wheat cultivated by the insured farmers was in the range of 1-8 bigha⁶ (average 2 bigha); for non-insured farmers, cultivation was in the range of 1-3 bigha (average 1.9 bighas). In addition, 48 percent of the payout receivers cultivated other field crops during the post-flood season, while only 32 percent of the non-insured farmers were able to cultivate other field crops (non-paddy crops) in the winter season. The average extent of post-flood winter season cultivation (wheat and non-paddy crops) by insured and non-insured farmers are shown in Figure 23. The average extent cultivated by insured farmers irrespective of payment received is marginally high compared to non-insured farmers, probably due to confidence built with the insurance scheme for risk transfer.

Figure 23: Average area of cultivation during the 2017 post-flood winter season (N=155)



Source: Authors; survey data, 2018.

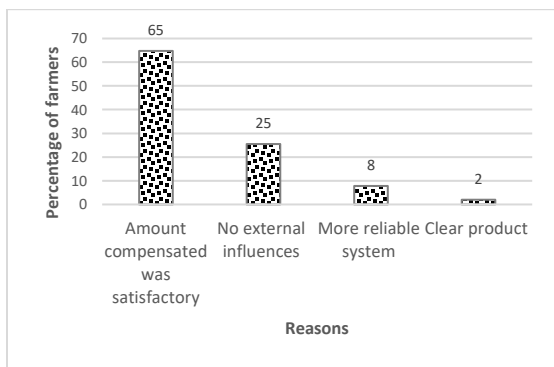
⁶ Bigha is a traditional unit of measurement of area of land. In Bihar, one hectare is equal to four bigha.

Willingness to participate in future IBFI schemes with a contribution of a premium

Farmers were informed during the survey that the premium cost of the current subsidized IBFI scheme is INR 2,200 per ha, which was fully paid by the project. Given this information, farmers were asked about their willingness to participate in future IBFI schemes if they had to make a partial contribution towards the premium. Only 33% of the insured farmers express their willingness to pay. All of the farmers who received the payout expressed their willingness to contribute 1-2 percent of the premium, but all other farmers who had not received a payout were not ready to be partnered with IBFI or contribute to a premium.

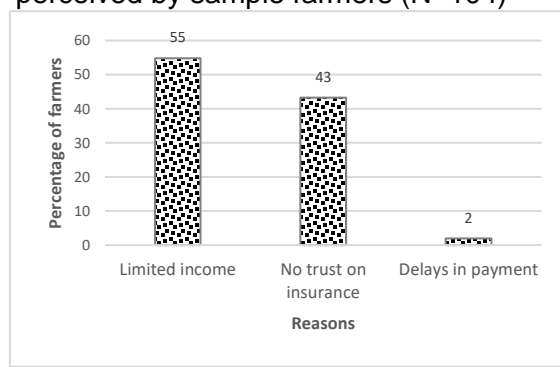
The farmers who were willing to contribute towards the IBFI premium were mainly satisfied with the amount of compensation they had been paid. The ability to receive the payout directly to their bank account without any external influence or bribery was another key factor in their willingness to enroll (Figure 24). The unwillingness of farmers to make a contribution to the premium was mainly due to insufficient income to pay the premium and lack of trust in insurance products (Figure 25). The farmers who had enrolled in IBFI and had not received the pay-out said that they do not have trust in insurance.

Figure 24: Reasons for willingness to enroll IBFI future with a contribution (N=51)



Source: Authors; survey data, 2018.

Figure 25: Reason for not willing to enroll IBFI schemes with a contribution to premium perceived by sample farmers (N=104)

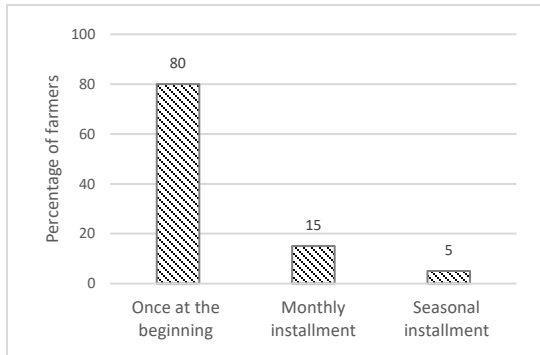


Source: Authors; survey data, 2018.

The majority of the farmers willing to contribute to the premium preferred to pay once at the beginning of the season (Figure 26). However, about 20 percent of the farmers preferred to pay the premium on an installment basis; all of these farmers are male and 80 percent of them are illiterate. Although installment payment systems for disaster insurance are difficult to implement due to the risk involved in the occurrence of disaster and payment of all the installments, this indicates the need for different strategies for different segments of the community in setting the premium and providing subsidies to make the product more inclusive.

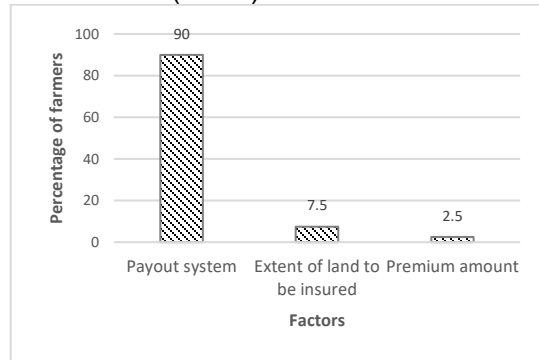
The farmers who were willing to contribute towards the premium were asked what factors they would consider when deciding to enroll in future IBFI schemes. The majority (80 percent) of the farmers answered that they would study the method of compensation payment of the insurance product (Figure 27). The answer is primarily an outcome of the difficulties faced by farmers in previous insurance schemes in which they were unable to obtain the payout.

Figure 26: Preference of the frequency paying insurance premium (N=40)



Source: Authors; survey data, 2018.

Figure 27: Factors to be considered in enrolling with future IBFI with a premium contribution (N=40)



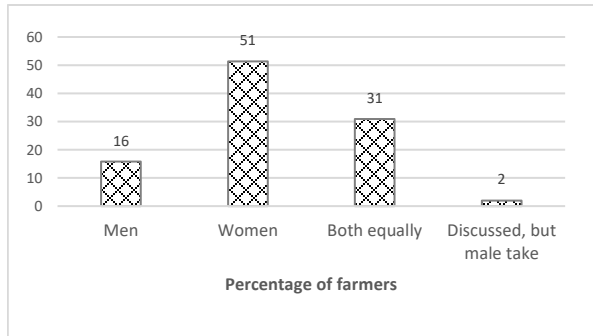
Source: Authors; survey data, 2018.

Household dynamics and the role of gender and in the decision-making process

Land ownership is mostly vested with men (86 percent) and they carry out the majority of agricultural activities such as land preparation, irrigation, spraying of chemicals, pests and disease management and use of machinery for harvesting. As already noted, women’s involvement in cultivation activities is primarily limited to planting, weeding, fertilizer application, harvesting, and post-harvest activities among small and marginal farmers. Women belonging to low-income families are also involved in other wage-earning opportunities available in the area.

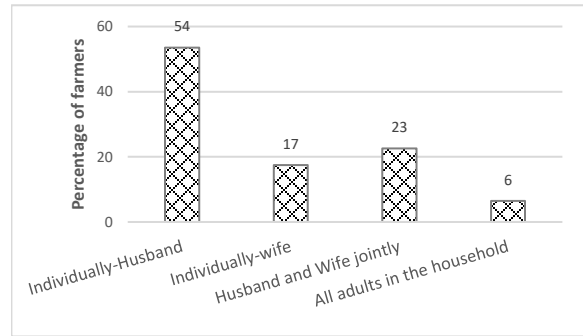
According to the KIIs, women in the better-off and upper-class households do not appear in public events and traditionally are not involved in field level agricultural practices, but they are part of the post-harvest processing activities, such as drying of paddies, and packing and storing the harvest, which is conducted primarily at the household level. Interestingly, survey findings show that women play a greater role at the household level in making decisions to introduce new innovations to agriculture (Figure 28). The knowledge and exposure women get through their involvement in SHGs contribute to making the women influential in this regard. According to the KIIs and FGDs, women play an influential role in the household decision making process, though sometimes the final decision is made by the men. The decision to enroll into the last IBFI pilot or any future such programs is mostly taken or will be primarily taken by men individually in more than half of the total households. However, the role of women in this process is evident in the other households, irrespective of the gender of the household head (Figure 29). In households, where women individually take decisions are primarily women headed households (85%).

Figure 28: Who make decisions at the household level to introduce agricultural innovations (N=152)



Source: Authors; survey data, 2018.

Figure 29: Who made/will make the decision to enroll IBFI (N=155)

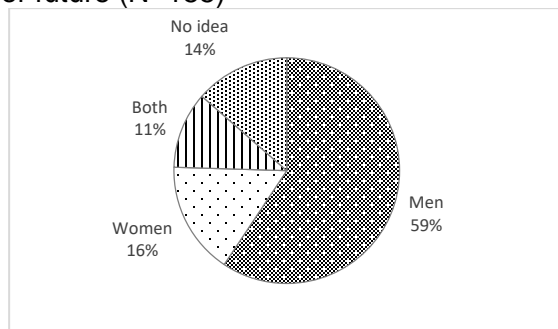


Source: Authors; survey data, 2018.

Note: There is a potential limitation in the interpretation for this question since one family member only answered the questionnaire, not separately by household head and spouse (male/female).

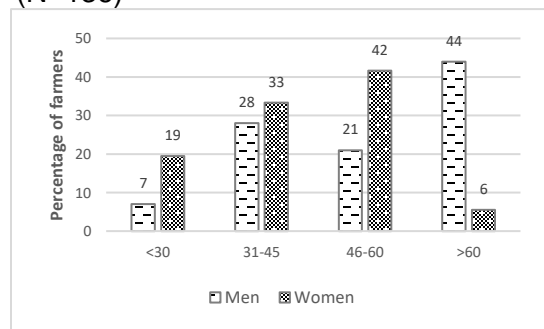
According to Figure 30, men were the main purchaser of the insurance in the IBFI pilot, and are slated to be so in future schemes. All farmers who were uncertain about the insurance ownership (14%) are currently also not having an insurance ownership, and are not sure about the future ownership. Most of the men who owned insurance were over 60 years of age, while women insurance owners were relatively younger, falling between 31-60 years of age (Figure 31). The reason for the age difference is probably because the men who enroll have previous experience with insurance, while young women are being educated about the importance of risk transfer strategies through the SHGs.

Figure 30: Gender of the insurance owner- current or future (N=155)



Source: Authors; survey data, 2018.

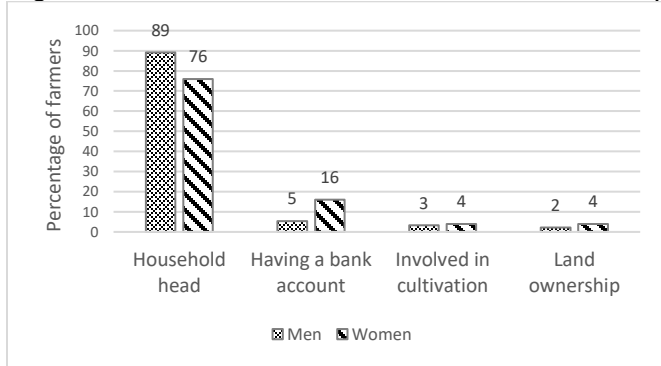
Figure 31: Age of the insurance owner (N=136)



Source: Authors; survey data, 2018.

The major reason behind insurance ownership for both genders is being household head (Figure 32). Despite being the household head and owning land, some smallholder farmers did not have a bank account and therefore could not enroll in the insurance project. The majority of women have bank accounts under the SHG program in order to perform group savings and lending, so if male farmers do not have their own accounts, they can access the program by enrolling through their wives' bank accounts.

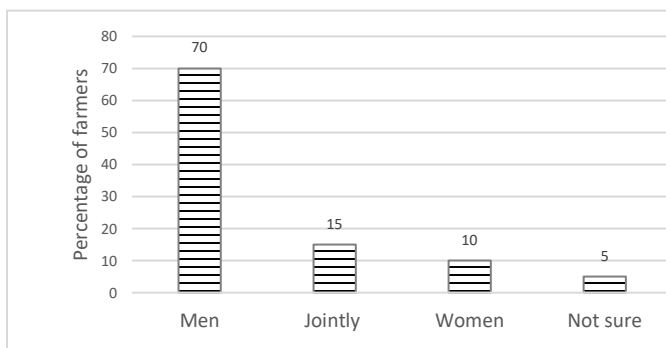
Figure 32: Reason behind the insurance ownership- Men (N=92) Vs women (N=25)



Source: Authors; survey data, 2018.

According to our survey, the decision about how to use the money at the household level was made primarily by the husband/household heads (Figure 33), but usually after consultation with their spouse. The women beneficiaries generally gave the insurance payout money to their husbands to invest in the next season's cultivation. Women, especially in marginal families whose husbands have migrated out of the village, preferred to invest in cereals (rice/wheat) because they use grain stocks as a coping strategy for food security during post-disaster periods.

Figure 33



Source: Authors; survey data, 2018.

Note: There is a potential limitation in the interpretation for this question since one family member only answered the questionnaire, not separately by household head and spouse (male/female).

Summary of major findings

Impacts of flood disaster on the farmers and their agricultural livelihoods

1. Flood is the major production risk in the area and farmers have experienced three major floods during the last five years.
2. The flood that occurred in 2017 created a flood level of 6-10 ft (1.8–3 m) in paddy fields, causing sub-merged condition of the crop for 15-25 days and leading to complete crop loss.
3. Farmers seldom practiced any adaptation measures to save the paddy crop from flood damage, with the exception of a few farmers who cultivated flood tolerant varieties.
4. Major coping mechanisms of the farmers during the post flood period are; utilize available savings for immediate requirements, depend on relief, and borrow from local moneylenders and NGOs.
5. Farmers’ reflections on past insurance programs are not impressive, because 90 percent of the past insured farmers did not receive any compensation despite having damages to crops. The few farmers who did receive compensation did not receive the payment on time and there were reported incidences of bribery in obtaining compensation.

The IBFI rollout process and the experiences of the intervention

1. The Insurance Company used two community mobilizers to complete the farmer enrolment process thorough individual meetings over the course of 12 days. Community meetings were also organized to create awareness about the IBFI scheme. The awareness programs had not taken into consideration different literacy levels across the community or prior experience of farmers with past insurance programs.
2. Farmers who received the information on IBFI and had all of the required enrolment documents were allowed to join the program on a first come, first serve basis.
3. The information provided during the awareness raising meetings for IBFI was not sufficient to make farmers understand the product, especially regarding the trigger points and in what scenarios the pay-out would be initiated. Only six percent of the insured farmers were satisfied with the clarity provided on the IBFI product. Farmers preferred learning about the insurance product through videos and found them the most clear.
4. The primary motivation behind the farmers’ enrolment was the subsidized nature of the product, indicating their lack of understanding of the broader concept of insurance.
5. About 90 percent of the farmers, irrespective of insurance enrolment, preferred to receive compensation payment directly to their bank accounts in order to avoid intermediaries, bribery and external influences keeping them from obtain the payment. All the pay-out receivers accepted the payment was fair across the farmers as the amount paid was same across the village.
6. About 80 percent of the insured farmers were fully satisfied with the quantum of sum insured, but only 33 percent of the farmers were fully satisfied with the area of land (maximum of one ha) covered by the insurance scheme. This lack of satisfaction with regard to the area covered by the insurance is most likely because the majority of beneficiaries were large landholders having more than one ha and they found the area covered to be too limited.
7. The immediate benefit of the compensation was that farmers were able to invest the money in the next season’s cultivation, and were able to avoid falling into further debt.

Pay-out money was been used for multiple purposes, including day to day household expenditures and investing in household and farm assets.

8. There was a marginal increase in the average extent of cultivated area in post flood season among insured farmers (irrespective of pay-out) compared to non-insured farmers, probably due to confidence developed with the insurance.

Socioeconomic features need to be considered to make the product is inclusive

1. The primary source of income for all farming households in the area comes from cropping, with about 70 percent of receiving 50-75 percent of their total household income from agricultural activities. Rice cultivation accounted for the largest portion of this income for the majority of farmers. The major secondary income source is rearing livestock. The findings highlight the lack of non-farm income earning opportunities in the area.
2. The cost of cultivating one ha of paddy during the 2017 Kharif season was INR 32,600, which provides an average yield of 3,800-4,500 kg/ha in a normal year.
3. The majority of insured farmers were male and the inclusion of women was limited to 13 percent of the total number of insured farmers. All of the female farmers who participated in the program are heads of households.
4. Almost half of the insured farmers are over 60 years of age. The inclusion of young farmers below 45 years of age is limited to 30 percent of the total number of insured farmers.
5. About 58 percent of the insured farmers are illiterate (this includes all the women and 65 percent of the men over 60 years of age) indicating the need for special consideration in designing awareness programs to promote insurance products.
6. The insurance program failed to include farmers representing scheduled castes and scheduled tribes. The majority of the insurance beneficiaries belong to OBCs. The rollout process needs to make special efforts to enrol marginalized communities into the process.
7. About 99 percent of the farmers insured under the IBFI program were beneficiaries of past government insurance schemes. Out of the total sample of farmers, only 25 percent are KCC holders and 95 percent of them are current IBFI beneficiaries, indicating that the farmers who had earlier experience with insurance schemes were more easily enrolled in the IBFI program.
8. All the insured farmers are landowners and almost half of them had one or more ha of land. The inclusion of landless and tenant farmers into the IBFI scheme was absent , and small landholders only made up 15 percent of the total number of insured farmers despite their dominance in the area. That said, it is encouraging to note that, as per the recommendations made in the initial field report of the IBFI assessment, the project has taken measures to include landless and marginal farmers in the second phase of the IBFI pilot currently being implemented in the area.

Willingness to enrol in future IBFI

1. Willingness to pay for future IBFI schemes was only expressed by farmers who received a pay-out, and they are only willing to pay up to 1-2 percent of the premium at the beginning of the season. These farmers were satisfied with the amount paid and the compensation method adapted.
2. Among the insured farmers who are not willing to contribute to an IBFI premium, 45 percent of them lost their trust in insurance, both in the IBFI scheme and in past government sponsored insurance programs.
3. Women’s involvement in agriculture is limited to selected activities and men are primarily the landowners in the majority of cases. However, women play an influential role at the household levels in introducing innovations into agriculture through their empowerment gained from SHGs.
4. In a majority of households it appeared that the men are usually the ones who make the decision to get involved in insurance schemes and are also the ones who own the right to the insurance. The main reason to own insurance is land ownership and being the household head. The decision about how to use the money at the household level was made primarily by the husband/household heads, but it was noted in both the survey and FGDs that usually, spouses are consulted.

Key lessons for future upscaling and addressing equity issues

How to make the product more inclusive

The beneficiary selection for IBFI should be done with care to make the pilot more inclusive, acknowledging the disparities that exist in society. There are a number of NGOs working in the area that focus on vulnerable segments of the community. These NGOs maintain data bases on poor and marginal people, including women headed households, landless farmers, smallholder farmers and marginalized people due to caste, ethnicity and religion. Therefore developing a partnership with a suitable local NGO would enable the pilot implementation to be more inclusive and allow the project to better understand the experience with the experiment from different segments of the community.

Enrolling landless and tenant farmers into IBFI is one important requirement to ensure inclusiveness, since about 30 percent of farmers are pure tenants (having only tenure land) and 50 percent are partial tenants (having both owners operated land and tenure land). However, under the current IBFI, the availability of documentation to prove the cultivation of a given plot of land in the form of land title or land receipt is one of the basic requirements to enroll in the insurance scheme. As all the tenure arrangements are conducted informally with no written documentation, tenant farmers have no documents to prove their tenancy in this context. Owners of the land are not willing to give written documents certifying the cultivation of land by a tenant, fearing that they will claim ownership of the land after some years. Therefore, an alternative arrangement is required to make the product inclusive to marginal and tenant farmers who represent around 70-80 percent of the community.

Alternative methods to give these farmers access would be to develop documents with landlords that include a clause to the effect that this document does not give the tenant any rights to the land and that he/she will not use this document to make such claims in the future. Another way to know if land is being cultivated by a particular farmer in a particular season is to obtain certification

from local panchayat representative. However, some of the Panchayat leaders are elected members and have no interest in certifying tenant and landless farmers, as it would be an obstacle for their political future. Another alternative would be to collaborate with local NGOs working in the particular villages who could certify the cultivation of land by a tenant during the rollout process. The project also could consider the approach to be adopted by the Government Crop Assistance Program (GCAP), implemented from 2018 onwards in the event of disasters that include landless farmers. Under the GCAP, area and type of crop cultivated certified by village level Kishan Salaka (Agricultural field officer) irrespective of land ownership will be considered, and crop assistance will be provided for any crop failures.

Some landowners don't have land titles in their possession and were therefore ineligible for the IBFI pilot. Obtaining proof of the title requires time, so the rollout process should be mindful and provide sufficient time to address these issues in the upscaling of the product. Some farmers reside outside the village/state, and their land is operated by their relatives or family friends. These landowners might be interested in IBFI but it would take time to submit their documents and would require on-the-ground support to help farmers/their families prepare these documents or get them from relevant agencies. If we consider the possibility of local corruption, the role of a trusted NGO would be all the more important in facilitating these processes.

Special efforts might be required to involve the illiterate/small/marginal farmers, considering their low levels of understanding about the IBFI product, lack of understanding about the importance of insurance and risk transfer mechanisms, and difficulties in gathering relevant documents and processing the documentation. Therefore, the mobilizers or local partners organizing awareness campaigns may be required to go beyond the typical mobilization phase to enable the involvement of these groups in the program. This further emphasizes the need to provide sufficient time for the rollout personnel to help these groups understand the complex structure of the product.

Building partnership with the local organizations or Microfinance institutions for long-term sustainability of the product

Taking into consideration the high levels of illiteracy, small land holdings, social divisions, and the caste system, it would be easier to work with the community through well-established local NGOs who have developed a social network and have experience working in the areas over the years. The IBFI program could benefit from the close link and trust between the community and the local organization. The approach would also help build the trust of the community in the insurance product and reduce the cost of community mobilization and transaction cost in reaching the different segments of the community. There are several organizations working in the area empowering SHGs for livelihood development. Micro-finance is one of the important components in these projects where microinsurance could play a vital role. Bihar Rural Livelihoods Project (JEEVIKA) and Aga Khan Rural support program (AKRSP) have formed their own SHGs and placed community mobilizers in Muzaffarpur District. Drawing on our findings in Sirajgang District, Bangladesh for example where two local NGOs Manab Mukti Sangstha (MMS) and National Development Program (NDP) supported the implementation of two different index flood insurance products introduced by Oxfam-Bangladesh and Asian Development Bank (ADB).

Enhancing the product transparency and clarity

High levels of disparity exist in the literacy and social class structure, with a large percentage of farmers being illiterate and over the age of 60. This demands a diversity of approaches to create awareness amongst the heterogeneous communities in the pilot areas. Use of promotional videos and community level group meetings with due consideration to the existence of pockets of

different social classes could provide positive results in creating awareness and higher opportunity to include social classes that would otherwise be marginalized. Given the complexity and technical nature of the product, lack of proper understanding, especially on trigger points and calculation of payout amount, has created significant negative feelings among partial payout receivers and payout non-receivers towards the scheme. The beneficiaries' understanding of the payout triggers and the trust of satellite data used to decide the pay-out are critical. The selection of suitable local volunteers from the pool of JEEVIKA 's Village Resource Persons (VRPs) or DRR platform created by Integrated Development Foundation (IDF) with the network of over 70 local NGOs with a volunteer force, trained volunteers pool of Oxfam India or other local level arrangements for community mobilization and catalyzing the community would help to minimize the distrust and easy communication with the community.

To improve the communication and knowledge sharing mechanism of the product, IBFI may consider the possibility of incorporating the following alternatives.

1. Make the flood and inundation data collected by the Water Resources Department accessible to the community by displaying in a public place.
2. Install simple flood level monitoring sticks at selected points in each village with the participation of community and Gram Panchayat to allow farmers to monitor and understand the flood levels themselves.
3. Involve selected community representatives in ground verification exercises performed by the insurer.
4. Introduce a pictorial/graphical illustration explaining the trigger points and payment structure.
5. Establish partnerships with local NGOs to implement and monitor the pilot at ground level.

Affordability of the premium among different farmer classes

According to the findings from our FGDs, the willingness to pay (WTP) for the insurance premium is in the range of 1-2 percent of the insured amount, but only a maximum of INR 500 per ha. The majority of farmers are not willing to give more than the government subsidized PMFBY. The maximum WTP was INR 500 per ha, but the actual premium was INR 2,200 per ha. The marginal and women-headed households expressed the lowest value of 1 percent of the insured amount, which amounts to INR 200. The WTP expressed indicates the requirement of a subsidy at the initial stages of the project until they understand the value of the risk transfer mechanism. The finding also indicate the necessity for different strategies for different segments of the community in setting the premium and providing subsidies to make the product more inclusive. Therefore, an institution willing and able to finance a major portion of the premium will be necessary in upscaling the product.

The lower premium will increase the financial burden to the subsidy provider and may require different options for premium payment. In other words, there is a trade-off between making the product more affordable/inclusive and maintaining its financial feasibility. One way to circumvent this could be to include an option of paying the subsidy on an installment basis, keeping in mind the duration of paddy crop is 3.5 months (maximum of two installments within one month). Another possibility is providing in-kind contribution (two labour days) linking with the potential development organization, which will pay the premium to the insurer on behalf of the farmers in lieu of labour. The average unskilled market value of a labour day is INR 300.

Building partnership with state and local government organizations

Gram panchayat is one of the key local organizations, which has equal representation from both males and females, linking the village with state and central government development programs. Though the Panchayat has not played a significant role in the IBFI, they are willing to be part of the project, since it would be a win-win situation for the project and the Panchayat members providing an opportunity to reach the community as the local political representatives. They could play a role in helping a scheme address farmers' distrust of insurance products and explain the importance of having risk transfer mechanisms, all while providing support to address the equity issues.

The Department of Agriculture, Cooperative Department and Disaster Management Departments have expressed positive feedback towards IBFI and are keen to support the advancement of the on-going pilot. All of these organizations, as well as the Water Resources Department, have their own network of field staff responsible for data collection during disasters, capacity building, institutional strengthening and transfer of technology at the grassroots level. Building partnerships with these organizations through the state government would open up avenues to share data and information and introduce the IBFI product in their routine training programs.

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Annex Table 1. Details of Key Informant Interviews held in Patna and Muzaffarpur

Respondent Name	Designation	Organization	Location	Meeting date
Mr. Chandan Kumar	Program Manager	Oxfam-India	Patna	02.04.2018
Mr. Ajith Kumar	Senior Advisor	District State Disaster Management Authority	Patna	02.04.2018
Mr. Mukul Kumar	Program coordinator-DRR	Save the Children	Patna	02.04.2018
Mr. Babul Prasad	Director	Integrated Development Foundation	Patna	02.04.2018
Mr. Bikash Bariar	Assistant Registrar	Cooperative Development Department	Patna	03.04.2018
Dr. J.S. Mishra	Head of crop research division	Indian Council of Agricultural Research, Eastern Region	Patna	03.04.2018
Mr. Niraj Kumar Singh	State Program Manager-JEEViKA	Ministry of Rural Development	Patna	03.04.2018
Mr. Santhosh Kumar Chowdery	The district head of Monitoring and Evaluation-JEEViKA	The district office of Ministry of Rural Development- JEEVIKA	Muzaffarpur	06.04.2018
Mr. Sunil Kumar Mandey	Regional Manager	Aga Khan Rural Support program	Muzaffarpur	03.04.2018
Dick Vijey Singh	Village head	Village Panchayat	Bhaga Khal Village	04.04.2018
Mr. Manoj Kumar Sahni	Village head	Village Panchayat	Lorha	04.04.2018
Mr. Pramodh Kumar	Village Head	Village Panchayat	Balour	04.04.2018

Annex Table 2. Details of FGDs held in Muzaffarpur

Location	Type of the village	Type of the group	No. of participants	
			Men	Women
Bhatgama	IBFI pay-out village	1. Pay-out receivers	12	0
		2. Non-insured farmers- (small/marginal)	04	02
		3. Women farmers	0	05
Madhurapatti	IBFI pay-out village	1. Pay-out receivers	07	03
		2. Non insured farmers	05	02
Paga	IBFI nonpay-out village	1. Insured farmers	05	03
		2. Non insured farmers	04	02
Godhiyari	Control village	1. Large farmers	04	0
		2. Small/marginal farmers	07	02
		3. Women farmers	0	06

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