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Photo: Rice field in a flood plain, Muzaffarpur, Bihar
Credit: Mohamed Aheeyar/IWMI

Ex-Post evaluation of the second pilot of the Index-Based Flood Insurance in Bihar, India: Reflections for upscale

Technical report

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IN PARTNERSHIP WITH:

Contents

Acronyms.....	3
Background.....	4
Objectives of the study.....	4
Methodology	5
Socioeconomic features of the farmers in the pilot villages	6
Adaptation to flood risk.....	10
Flood of 2018 and its impacts on rice cultivation and household economy.....	11
The rollout process	13
Farmer satisfaction on IBFI product features and the process.....	14
The payout process, utilization of money and immediate benefits.....	16
Willingness to pay for future IBFI	18
Key Messages	19
References	20

Acronyms

BICSA	Bundled solutions with seed systems, index insurance, and climate information to manage agricultural risks
DRR	Disaster Risk Reduction
FGD	Focus Group Discussions
GOB	Government of Bihar
GOI	Government of India
HDFC	Housing Development and Finance Corporation
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

Bihar is the third most populous state in India with a population of more than 108 million. The state is primarily rural-based comprising a rural population of 88.7 percent (Gol, 2015). The sex ratio (female/1000male) in Bihar is 917.9. The majority of the population ((82.8 percent) belongs to the social group of the 'Other' category that includes 'other backward class' and 'general' category. The dominant religious group is Hindu (83.2 percent) followed by 16.5 percent of the Muslim population. Agriculture is the primary livelihoods, but, frequent disasters (floods and droughts) cause risk and uncertainty to production and productivity. Since the majority of the farmers are involved in subsistence cultivation owning less than 0.4 ha of land, their resilience to disasters is low. Therefore, migration either within or outside the state remains one of the most notable options for Bihar's disaster-affected people. The out-migration of males from the state has a bearing on the nature of engagement and activities of women, often called 'the feminization' of farm and non-farm activities in terms of production, consumption and household welfare.

The Government of Bihar (GoB) has rolled out one of its own schemes in the 2018 Kharif season¹ to support farmers, including landless farmers, to recover from crop damages caused by a natural disaster. The program is named, Bihar State Crop Assistance Scheme. This is not an insurance scheme requiring payment of premium and it is an assured support from the government in the event of crop damage above the pre-determined threshold level up to a maximum of 2 ha land. Both schemes Pradhan Manthri Fasal Bima Yojana (PMFBY) and Bihar State Crop Assistance Scheme will run concurrently. According to the discussion held with the Cooperative Department- the nodal agency responsible for PMFBY - the reason for introducing a second scheme with PMFBY is that farmers were not being benefitted by PMFBY alone. Hence, the state government felt the need for the scheme.

The International Water Management Institute's (IWMI) Index-Based Flood Insurance (IBFI) product was piloted in a second consecutive season among 408 farmers in eleven villages representing two blocks (Gaighat and Katra blocks) of Muzaffarpur District, Bihar during the 2018 Kharif season. IBFI covers a maximum of one ha per beneficiary or less. The limitation on land coverage was put in place to allow a maximum number of farmers (408) to be in the program given the limited resources available. Housing Development and Finance Corporation (HDFC) partnered with the project as the insurer. According to the insurance product design, partial insurance payment was triggered in two villages out of eleven villages- Bhatgama and Ajitpur Bakuchi. Farmers insured one ha extent received a maximum payment of INR 3500 and other farmers received the payment proportionate to the land area insured. This report presents the findings of the IBFI ex-post evaluation undertaken in the pilot villages. The findings of this study provide lessons and experiences of the pilot in terms of the design of the product, rollout process, and the level of inclusiveness.

Objectives of the study

The major objectives of the evaluation were to understand the performance of the IBFI product in reaching diverse groups of farmers and the hindrances to making the insurance more inclusive, in order to recommend solutions and strategies to address equity issues. The specific objectives of the study are;

1. Study the effects of the flood on agricultural livelihood, current coping mechanism and role of insurance to transfer risks
2. Farmer understanding and perceptions of the IBFI product design, rollout, and the payout process.

¹ The Kharif season is monsoon/summer season starts from the third week of May and lasts until the end of October.

3. Challenges associated with upscaling IBFI product and ways and means to improve the insurance
4. Socioeconomic effects of the insurance payout, potential risks to scaling, and ways to improve the design and rollout process.
5. Assess the willingness of farmers to enroll with IBFI in future with a contribution
6. Decision-making dynamics at the household level on enrolment in the insurance scheme, ownership in insurance, and utilization of insurance payout.

Methodology

The findings are based on the qualitative and quantitative assessments in the pilot areas through a household survey, Key Informant Interviews (KII) and Focus Group Discussion (FGD) during July 2018. The qualitative data collection process, (KIIs and FGDs) was conducted using checklists prepared separately for government institutions, local leaders/panchayat members, IBFI beneficiaries (both payout receivers and non-receivers), and IBFI non-beneficiaries. FGDs were conducted in all pilot villages centering on different categories of farmers - small and marginal farmers, landless farmers, and women farmers. Interviews with officials from key institutions and community organizations at local and district levels were conducted to capture their perceptions of the flood impacts, strategies adopted to minimize the flood damages, and the roles of institutions in flood recovery activities. The list of KII and FGDs conducted during the study are listed in Annex Table 1 and 2, respectively.

The sample survey was conducted among 150 farmers that included 23 IBFI payout receivers, 89 IBFI payout non-receivers and 38 IBFI non-beneficiaries representing 11 pilot villages. The sampling method is given in Table 1. The sample households were stratified into the following three categories with attention to include women farmers in all three groups:

- a. Farmer households who received a payout.
- b. Farmers who enrolled in IBFI but did not get a payout.
- c. Farmers who did not enroll in IBFI.

Table 1: Selection of sample farmers for questionnaire survey

Name of pilot village	Total No. of beneficiary (insured) Farmers	Sample farmers (received compensation)	Sample farmers (did not receive compensation)	Sample farmers (non-beneficiary farmers)
Ajitpur Bakuchi	11	09	-	1
Andama	38	-	5	-
Barri	32	--	8	6
Bhatgama	159	14	-	1
Gangeya	41	-	9	11
Harkhauli	13	-	12	3
Harpur	30	-	14	3
Kalyanpur	9	-	8	-
Ladaur	34	-	17	6
Madhopur	23	-	9	7
Patari	18	-	7	4
Grand Total	408	23	89	38

Source: Authors' survey, 2019

Figure 1: Pilot villages- Gaighat and Katra Blocks, Muzaffarpur District


Source: IWMI (Map prepared by Niranga Alahakoon, IWMI)

Socioeconomic features of the farmers in the pilot villages

Some of the main socio-economic features of the farmers in the pilot villages elicited through qualitative assessment are described in Table 2. The majority of the farmers in the area are small and marginal having an average landholding of 0.4ha or less that usually leading to engaging in sharecropping or other tenurial arrangements to earn a sizeable income from cultivation. The landless farm percentages in the pilot villages vary from 0-80 percent. The database of the beneficiary list of the rollout indicates that the insurance has included 13.5 percent of women beneficiaries, 12.5 percent of landless farmers, and 6 percent of marginal farmers (less than 1 Bigha²). Although landless farmers are considered to include in the program, inclusion has taken place only in one village (Bhatgama) and not well-thought-out in the other 10 villages. Landless farmers are highest in Patari village and there are no landless farmers reported in Ajitpur Bakuchi.

Table 2. Profile of visited Weather Index-Based Crop Insurance project villages

Village name	No. of farmers	% of landless farmers	% of women-headed households	Levels of literacy	Social divisions	% of small and marginal farmers ³
Andama	50	50	14	10		50
Ajitpur Bakuchi	200	0	8			80
Harkhauli	100	10	10	10	SC-10% Minorities-10%	75
Gangiya	400	35	3	70	SC- 25%, OBC- 10%	50
Kalyanpur	480	31	15	70	SC-20% OBC- 25%	60
Barri	300	33	25	50	OBC-20% Minorities-80%	60
Madhopur	75	33	13	90	SC- 8 OBC- 50	86
Harpur	100	33	20	75	SC-20 OBC-80	92
Patari	600	80	20	40	SC- 80 OBC-20	90

Source: Authors' survey, 2019.

The number of women-headed households varies up to 3-25% of the total households. The most common reason for the women's headship is the migration of male counterparts to cities and neighboring states to work as laborers, forcing women to shoulder the household responsibilities during difficult times.

² Bigha is a traditional unit of measurement of area of land. In Bihar, one hectare is equal to four bigha.

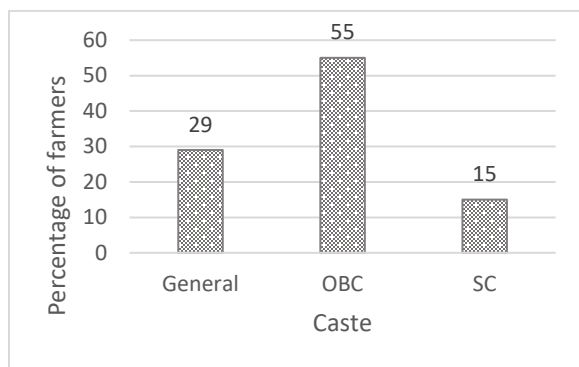
³Small farmers earn their livelihood cultivating ½ ac to 2.5 ac (1 ha), and marginal farmers cultivate less than ½ ac of land

Among the sample 112 insured farmers, 76 percent are male farmers (Figure 2); women farmers enrolled in the program mainly belong to women-headed households due to the migration of their husbands. There were no widows in the sample beneficiaries.

Social divisions such as caste and ethnicities prevailed in all the villages, though the majority of the villages are Hindu dominated. Schedule caste (SC) - the officially designated groups of historically disadvantaged people exist in almost all the villages (8% to 80% of the total farming households). The survey findings indicate that the inclusion of SC was 15% of total beneficiaries, representing farmers from Bhatgama, Gangeya, Harpur, Ladaur, and Patauri. The village Patauri consisted of 80% of SC farmers but only six SC farmers were enrolled in IBFI out of 18 total beneficiaries in the village because the majority of SC farmers are landless. According to Figure 2, the majority of the insured farmers belonged to general and other backward classes (OBC) and the representation of SC in the sample is almost equal to the average SC ratio in the State. The program had included 9% of the Muslim minority.

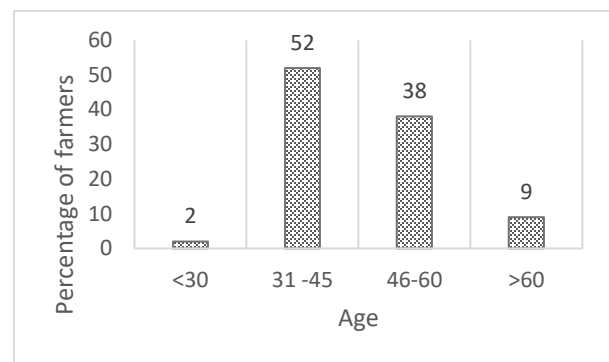
Over 50 percent of sample-insured farmers are youth in the age group of less than 45 years, and farmers over 60 years were limited to 9 percent (Figure 3). This is a positive improvement in terms of the inclusion of younger farmers compared to the first pilot, where youth inclusion was limited to 30 percent of the total insured farmers.

Figure 2: Caste of insured farmers (N=112)



Source: Authors' survey data, 2019

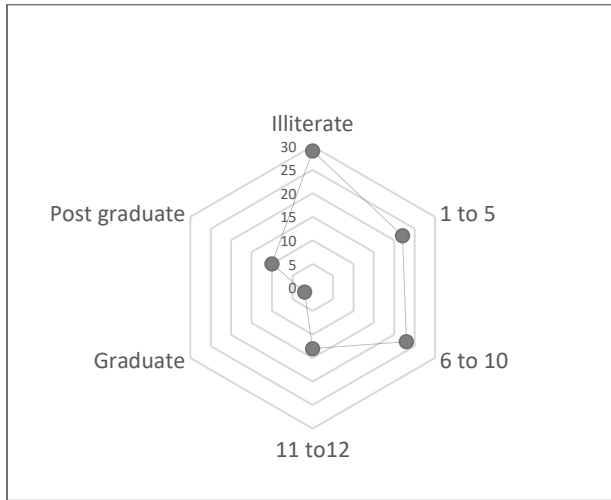
Figure 3: Age of insured farmers (N=112)



Source: Authors' survey data, 2019

Levels of literacy of the farmers in the sample villages vary from 10% to 90% depending on the village context, though levels of literacy among the younger generation are quite high. The sample survey shows that about one-third of insured farmers are illiterate (Figure 4), emphasizing the requirement of special attention in designing awareness programs to promote the insurance product.

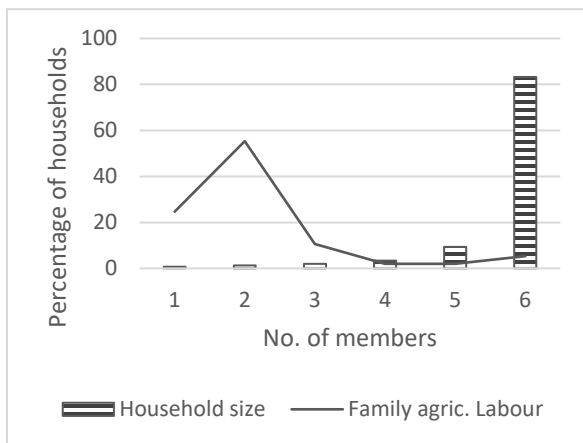
Figure 4: Level of education of insured farmers (N=100)



Source: Authors' survey, 2019.

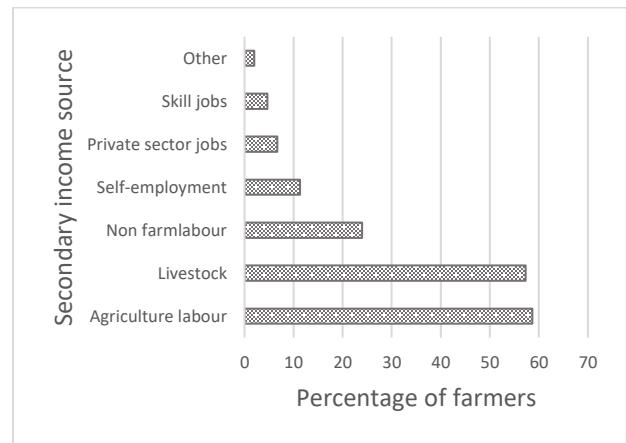
As found in the previous IBFI evaluation, the majority of households are relatively bigger in size consisting of more than five members for over 80 percent of the total households (Figure 5). This is corresponding to the Bihar state mean household size of 5.5 in 2011 (GOI, 2015). Among these households, two or more members are involved in agricultural activities in 75 percent of the households. The primary source of income for the ninety-six percent of the households is agriculture, but others mostly depend on wage labor and government subsidies despite operating their own land. Livestock rearing is well integrated with agriculture in the area and prominent secondary income source for around 55% of the households (Figure 6). Women's engagement in livestock rearing is very prominent (Figure 7), only second to on-farm labour income and it is used as an asset for emergency financial needs. Some households have multiple secondary income sources.

Figure 5: Household size



Source: Authors' survey, 2019.

Figure 6: Secondary source of income



Source: Authors' survey, 2019.

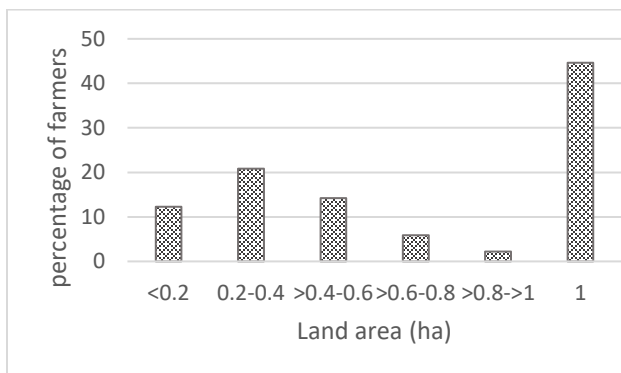
Figure 7: Women’s involvement in livestock rearing



Photo credits: Mohamed Aheeyar/IWMI

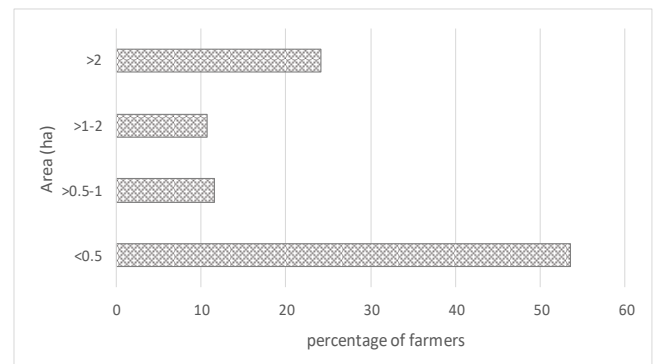
The extent of paddy land insured under IBFI is illustrated in Figure 8. The percentage of marginal farmers owning less than 0.2ha enrolled in insurance was limited to 12. About 45% of the farmers have insured the maximum allowable extent of one ha under the project, indicating larger farm owners more easily accessed the project compared to marginal and small farmers, despite the latter being more in number. There was a similar finding in last year's pilot as well.

Figure 8: Area of paddy land insured under the IBFI (N=408)



Source: Authors’ survey, 2019

Figure 9: Area of paddy cultivation in 2018 Kharif season by sample farmers (N=112)



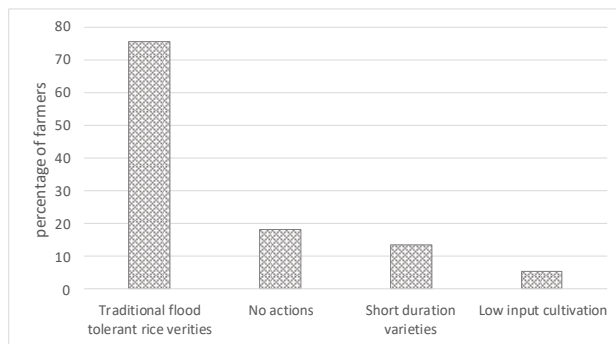
Source: Authors’ survey, 2019

Adaptation to flood risk

Rice is the main Kharif season crop in the pilot areas. Flood is the primary crop production risk for farmers in all the villages. Although flood is an almost annual event, farmers have experienced three major floods during the last 5 years in 2013, 2015 and 2017. The 2018 flood occurred at the crop age of 45 days. The flood height in the paddy field was 4-7 feet for 7-20 days. Rice crop is cultivated in the Kharif season during the period of mid-July to November. Knowing the flood risk in Kharif season, most of the farmers were aware and adopted traditional flood-tolerant varieties to some extent (Figure 10) depending on the availability of traditional flood tolerant seed paddy, but they are not popular due to the requirement of more labor inputs and low yield. Though the

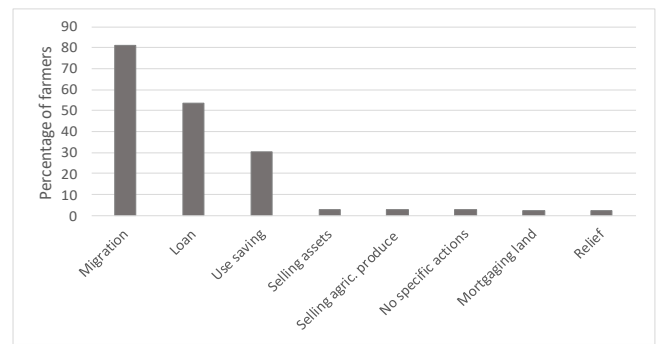
Department of Agriculture has produced a flood-tolerant hybrid variety (Swarna Sub 1), it has not reached the farmers well and they are generally not aware of hybrid flood-tolerant rice varieties. Farmers are very much concerned about the winter (Rabi⁴) cultivation as it is the main source of annual income. Therefore, most farmers chose to migrate to other areas as a main flood coping strategy and to earn some extra income that can be used to invest in the Rabi crop. Therefore, migration income is key to send money to households to prepare for the winter season cultivation. After migration income, the main coping strategy adopted by farmers to deal with disaster effects, is borrowing from local moneylenders.

Figure 10: Strategies adopted to minimize flood damages to the cultivation (N=148)



Source: Authors' survey, 2019

Figure 11: Flood coping mechanisms practiced (N=148)



Source: Authors' survey, 2019

Although farmers were enrolled with the government crop assistance program as the replacement to PMFBY to provide financial assistance in case of crop damages caused by disasters, no farmers in the pilot villages had received any cash transfers for the damages that occurred in the 2018 flood. The government had declared drought in the entire district in 2018, despite flood damages recorded in many villages.

Flood of 2018 and its impacts on rice cultivation and household economy

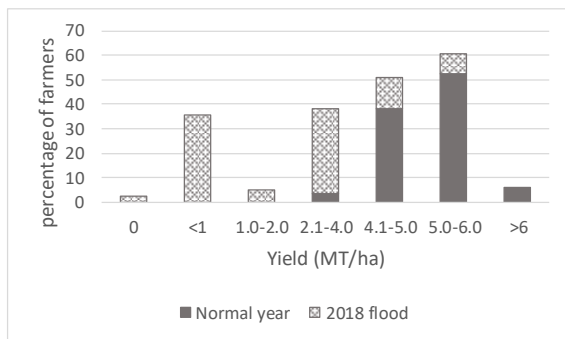
The cost of paddy cultivation varies from INR 30,000 to INR 36,000/ha in 2018. The average paddy yield in a normal year is between 3500-4500kg/ha depending on the location and fertility of the land, but it was reduced to 2100kg/ha in the 2018 flood season. The comparative yield received in the normal year and flood year 2018 by the sample farmers is illustrated in figure 9. According to the FGDs and KIIs, the flood that occurred in 2018 caused partial to complete crop damage depending on the topography of the land, causing serious economic hardships to the farmers. Figure 10 illustrates the level of yield loss both in paddy and other field crops during the

⁴ Rabi is the winter season, starts from November and end in April

2018 Kharif season among the sample farmers. The findings show that about 50 % of the sample non-insured farmers have not cultivated rice during the flood season. The average paddy-selling price in 2018 was INR 13.70/kg. The amount of marketable surplus after keeping stock for household consumption is illustrated in Figure 10, indicating the contribution of paddy to household income. The majority of the farmers are selling more than 50 % of the paddy produced. Though farmers received partial yield, the quality of flood-affected paddy was substandard and therefore the price was lower, compared to previous years.

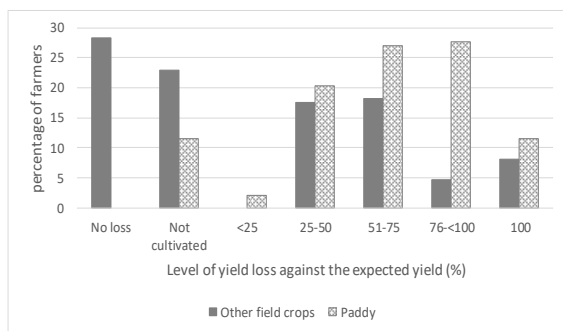
Landless laborers and women belonging to low-income families suffered most due to lack of wage-earning opportunities, forcing them to migrate to cities and to neighboring states.

Figure 9: Paddy yield of insured farmers: Normal Vs flood year (N=84)



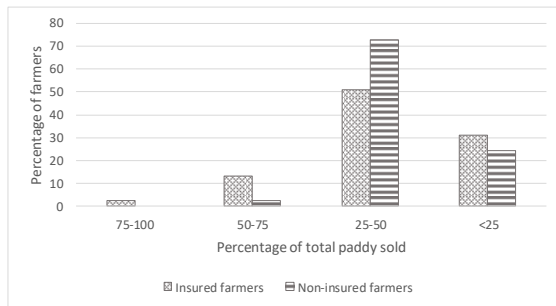
Source: Authors' survey, 2019

Figure 10: Level of yield loss: paddy and other field crops (N=148)



Source: Authors' survey, 2019

Figure 11: Marketable surplus of paddy (N=150)



Source: Authors' survey, 2019

The rollout process

The rollout process of the second pilot of IBFI in the selected villages for beneficiaries was held during the month of August 2018 with the participation of a staff member representing the insurance company (HDFC) and a member of the IBFI technical team. A community meeting was held in each village or a combination of two neighboring villages to provide awareness of the product. The communication for the meeting has been done by contacting the village head or other key persons in the village by the IBFI team. The key person spread the message in the village through his contacts and word of mouth. Figure 12 describes how IBFI beneficiaries received the information about the insurance product. Those who were available on the given date and heard about the product have attended the meeting. In some villages, special effort was made to bring the landless farmers and women-headed households to the meeting for IBFI enrolment to address inclusiveness and equity in the program.

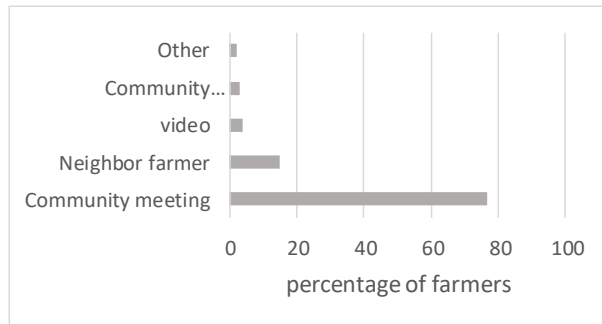
Awareness programs and enrollment happened on the same day. At the public meeting, farmers were told about the documents required for enrolment, product features, trigger points and payment mechanism in the event of payment triggers. Some farmers who were unable to attend the awareness session but heard about the insurance scheme later in the day from neighbors or key person in the village, were also enrolled to the insurance without clear understanding of the product. The project was able to convince the insurer to enroll the landless farmers with the farmer's self-declaration of proof of cultivation. Enrollment of landless farmers is a good achievement compared to the first rollout held in 2017, where landless farmers were completely dropped.

Figure 13 explains the effectiveness of the tools used by the project to create awareness, as perceived by the insured farmers. The findings show that the adopted tools to create awareness of the insurance product is largely ineffective, and provided little understandings about f the trigger points.

It was reported during the village level KIIs that self-help groups of JEEViKA⁵ are good forums to recognize marginal farmers and provide awareness of the insurance. The village resource persons (VRP) of JEEViKA have a good understanding about the village and expressed willingness to support the project to address issues of equity and of mobilizing farmers.

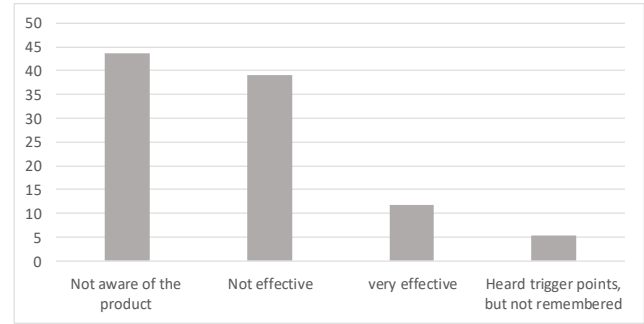
⁵ JEEViKA is an autonomous body under the Department of Rural Development, Government of Bihar.

Figure 12: How farmers heard about the insurance product (N=108)



Source: Authors' survey, 2019

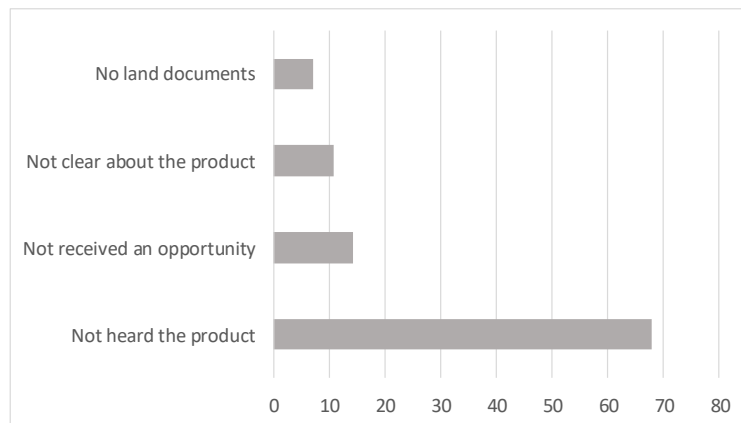
Figure 13: Effectiveness of the tool used to create awareness (N= 110)



Source: Authors' survey, 2019

Non-enrolled farmers were asked about the reason for not enrolling. The major reason is not being aware of the product, indicating the gap in communication methods used (Figure 14).

Figure 14: Reason for non-participation in IBFI as perceived by non-enrolled farmers (N=28)



Source: Authors' survey, 2019.

Farmer satisfaction with IBFI product features and the process

Figure 14 indicates the level of farmer satisfaction with different aspects of the IBFI product, namely:

- amount of compensation received as perceived by payout receivers
- use of bank transfer method as perceived by payout receivers
- land area covered by the insurance (maximum 1ha) as perceived by all insurance farmers
- quantum of sum insured (INR 20,000/ha) as perceived by all the insured farmers
- method adopted to enroll the farmers as perceived by all the insured farmers
- documentation process adopted as perceived by all the insured farmers

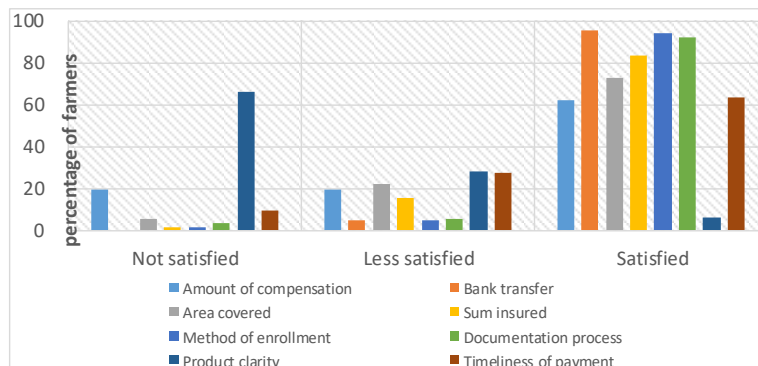
- explanation/clarity provided on the product as perceived by all insured farmers
- time taken to transfer the compensation money

The majority of farmers are satisfied with all the aspects except the methods/s adopted to create awareness on IBFI, and clarity provided on the insurance product (Figure 15). According to Figure 16, the majority of the farmers in the sample areas preferred visual tools such as video and posters over the community meetings, because they are easy to understand and more engaging given the low levels of literacy.

Farmers' reflections from the FGDs and KIIs show that they were of the general belief that the insurance will provide compensation in the event of substantial crop damages caused by floods. However, their understanding of trigger points and how it works is not clear, though some farmers have heard about these terms (Figure 13). For example, in Bhatgama where IBFI was piloted for the second consecutive season and payment was triggered in both seasons, a FGD of women IBFI beneficiaries revealed that none of them understood how the product actually works or what the payout triggers are. They were asked the reason for their enrollment despite now knowing the product. Surprisingly, they said they joined the program on the recommendation of the key person in the village (they named one of the key contact persons of the village supporting the project) as they trust him. They also said that they are ready to place their thumb signature on any document if this particular person asked them to. The unrealistic expectation for compensation amongst non-payout villages is also partly due to lack of understanding of the product. The farmers who did not receive compensation were not satisfied with the payment system because they did not understand why they were not paid despite crop damages, raising questions on clarity and transparency of the product. Farmers said that there should be a better way to verify the satellite data through participatory verification on the ground.

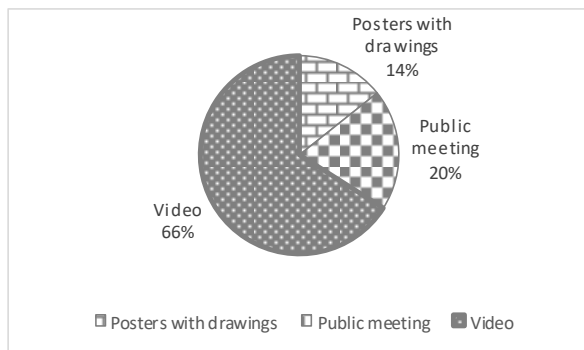
Although about 50% of the payout receivers in the sample accepted that the amount paid was fair, 43% of the remaining payout receivers were concerned about not considering the actual crop damage in the payment process. This again indicates the deficiency in understanding the product.

Figure 15: Farmer satisfaction on different aspects of IBFI



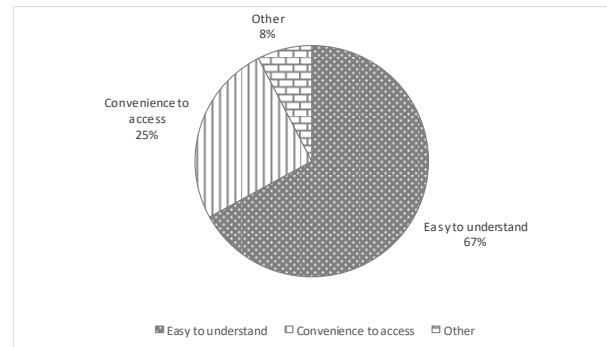
Source: Authors' survey, 2019

Figure 16: Preferred communication tool to create awareness (N=106)



Source: Authors' survey, 2019

Figure 17: Reason for preference to the communication tool (N=106)



Source: Authors' survey, 2019

Another issue expressed by farmers is that despite sharing their information and required documents to enroll in IBFI with the promise of compensation payment in the event of flood damage, they have not been provided a policy document or at least a receipt to prove their affiliation with IBFI. If the issuing of insurance policy has an added cost, the project may consider issuing a receipt with a reference number or dispatching a mobile message to all beneficiaries. Similarly, it would also be useful to alert the farmers about the trigger points and the triggering of payment.

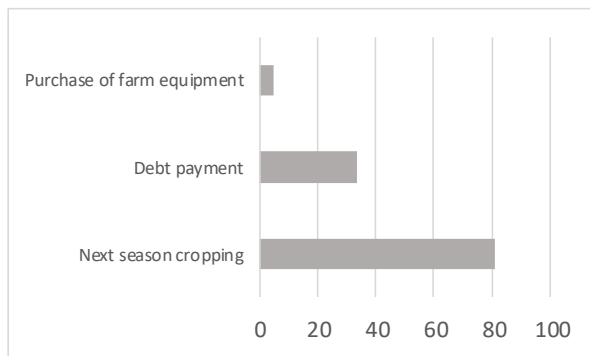
The payout process, utilization of money and immediate benefits

The sum insured was INR 20,000 per ha for total crop loss. The 2018 flood triggered the partial payout in two pilot villages benefitting 170 farmers. Farmers received 17.5% of the insured amount as compensation that provided a maximum of INR 3500 for one ha coverage. Payment receivers were highly satisfied with the timeliness of payment and direct bank transfer method adopted since there is no requirement of intermediaries or potential bribes. All the sample farmers both insured and non-insured preferred the direct money transfer through a bank. About 52% of the payment receivers perceived that compensation provided was fair across the farmers targeted, but 43% of them said compensation failed to consider the degree of damages encountered by the farmers, that is not uniform across the village.

The majority of the farmers have utilized the compensation money for next season's cultivation (Figure 18), which is the most important part of their annual livelihood cycle. The payout also helps the farmers keep away from local moneylenders, and avoid purchase of inputs on credit from local traders to some extent. The decision of how to use the money at the household level has been taken primarily by husband/household heads, but usually, in consultation with their spouse. The partial payout was not sufficient to invest in livelihood assets as reported by the households.

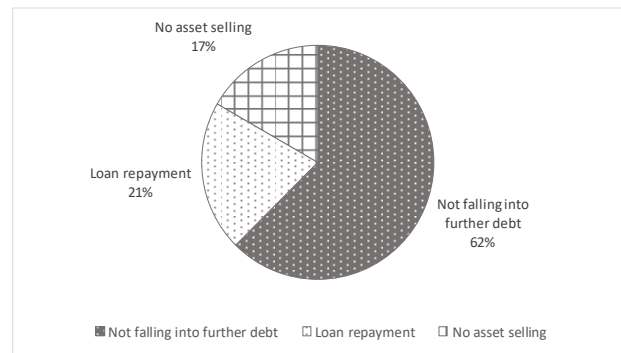
The beneficiary farmers were inquired about the immediate benefit of the IBFI payout to the household. About 62% of the payout receivers said the payout helped to prevent them from falling into further debt, while 22% have repaid the previous loan (Figure 19). In the meantime, 17% of the farmers declared that the payment helped them to avoid selling productive assets due to hardship caused by the flood. The decision on how to utilize the compensation provided was taken by a male member of the household among 52% of the compensation receivers, but the joint decision by male and female was a practice in 20% of the households. It was reflected in the women’s FGD that the reason for the male dominance in decision making about utilization of payout money, is due to the use of the payment mainly for next season’s cultivation – primarily handled by male members.

Figure 18: Use of compensation as perceived by the compensation receivers (N=21)



Source: Authors’ survey, 2019

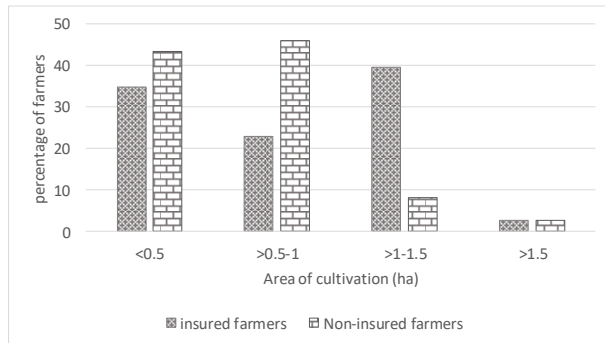
Figure 19: Immediate use of compensation payment (N=21)



Source: Authors’ survey, 2019

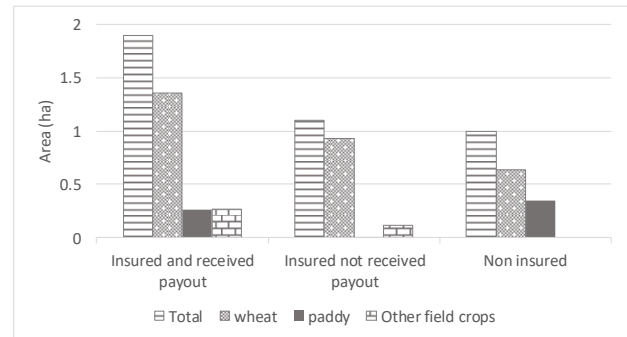
The impact of the insurance with or without compensation was also reflected in the post-flood season cultivation (winter season). The farmers who had enrolled with IBFI were ready to take the risk or invest more in the next season’s cultivation. Winter wheat is one of the main crops that generate more income for the households in a cropping year. The extent cultivated by the farmers in the post-flood winter season is illustrated in Figure 20, indicating relatively larger holdings of wheat cultivation by the insured farmers. Figure 21 describes the average land area cultivated by the insured farmers (compensation receivers and non-receivers) and non-insured farmers showing the effects of insurance engagement and the compensation provided.

Figure 20: Area of wheat cultivation in the winter season



Source: Authors' survey, 2019

Figure 21: Area of cultivation of different crops by insured and non-insured farmers

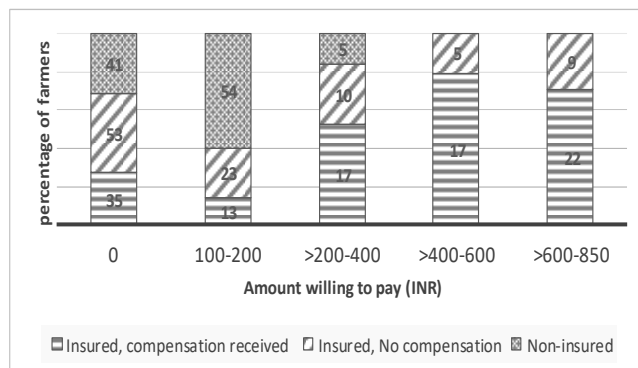


Source: Authors' survey 2019

Willingness to pay for future IBFI

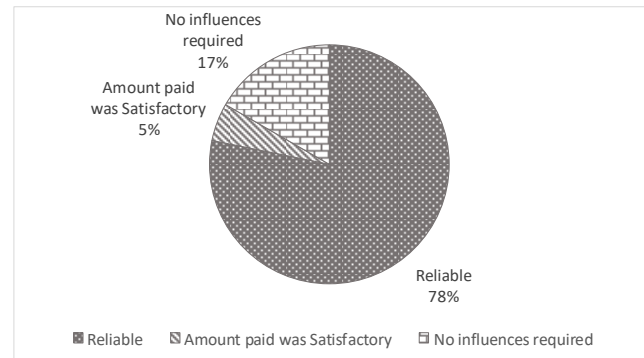
Farmers in the payout villages both beneficiary and non-beneficiary are happy about the payout and willing to continue in the program even with a contribution to the premium. Figure 22 shows the amount of willingness to pay (WTP) by the sample farmers in the future IBFI scheme. The amount WTP is higher among the compensation receivers as they have already developed trust in this product. Significant interest was also shown by the non-insured farmers in the payout villages to join the scheme since these farmers have seen the benefits enjoyed by insured farmers with the payout. In the second pilot, the largest numbers of enrollment are recorded in Bhatgama, where farmers have received the full payout in the first pilot. Farmers in both Bhatgama and Ajitpur Bakuchi are willing to pay 3%-4% of the premium as their contribution. The major reasons for the willingness to continue with IBFI while contributing to the premium are the reliability of the product and payment of satisfactory compensation.

Figure 22: Amount WTP to cover future IBFI premium by insured and non-insured farmers



Source: Authors' survey, 2019

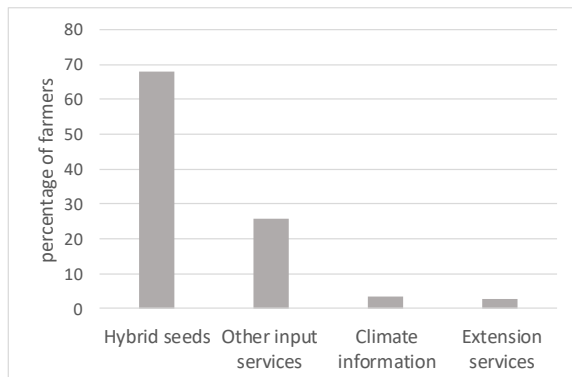
Figure 23: Reason to enroll IBFI with a contribution (N=78)



Source: Authors' survey, 2019

Crop insurance has been provided as a bundled product with agricultural inputs and/or services that are needed to improve crop productivity (Hazell et al, 2010). IWMI is piloting the bundled insurance with hybrid seeds and climate information in Bihar for both drought and flood disasters. Figure 24 indicates the farmers' choices of different bundling options as perceived by sample farmers. The majority of the farmers prefer hybrid seeds bundled with crop insurance.

Figure 24: Preferred bundling options of the sample farmers (N=149)



Source: Authors' survey, 2019.

Key Messages

1. Lack of a clear understanding about the product and transparency continues to be an issue in all the villages. Deficiency in understanding has created expectations about the insurance claim and negative attitudes that would be a hindrance for upscaling the pilot. To increase the clarity and transparency, the following recommendations are proposed in addition to the recommendations made in 2018 (Aheeyar et al, 2019);
 - a) Use of local NGOs able to mobilize the community and identify the different segments of the community, and able to communicate with the local people in the local languages (for example Maithili language in Muzaffarpur) wherever needed, though the majority could understand Hindi.
 - b) Organize separate awareness meetings for different categories of farmers (small and marginal farmers, landless farmers, women farmers, and other underprivileged groups) separately to introduce the product and make them cognizant.
 - c) Provide training to village resource persons (TOT) able to continuously conduct individual meetings among insurance beneficiaries to educate them about the product and to alert them on flood levels and trigger points.
 - d) Use of text (including local languages) and non-textual (visual) tools to create awareness
 - e) The project can update the farmers through mobile messages about the flood levels and corresponding trigger points. The project can install local level weather stations or flood level monitoring equipment (at least a flood water level monitoring stick) to

- increase the transparency and accountability of the product or display the flood level on a daily basis in a public place.
- f) Involve community members for field verification of data
2. To ensure inclusiveness we reiterate the need of a local NGO as a partner for field implementation of the project. The NGO should have an understanding of the village community profile and dynamics and be familiar with local languages and customs. The NGO should provide sufficient time to mobilize the community and identify the beneficiaries representing different segments of the community. Sufficient time is also essential for the community to prepare the required documents and open a bank account if they do not have one. Extra time may be required to engage with illiterate/small/marginal farmers, who may require special efforts to understand the importance of the risk transfer mechanism and IBFI product considering their low levels of understanding about the complex product.
 3. There is a willingness among VRPs to support IBFI to make it inclusive and increase the clarity of the product since they are not full-time employees of JEEViKa. The project may explore this potential partnership by paying a small honorarium for their services.
 4. WTP for the insurance exists in the villages where payout was triggered. The farmers have expressed their consensus to pay 3%-4% of the premium with the maximum of INR 500 per ha.
 5. Bundling the insurance with other agricultural inputs and disaster risk reduction strategies (resistant varieties, agronomic information, climate intelligence and extension supports) would increase more resilience for disasters.

References

Aheeyar, M.; de Silva, S.; Sellamuttu, S.S. 2019. Pilot evaluation of the Index Based Flood Insurance in Bihar, India: Lessons of Experiences; In CGIAR Research Program on Water, Land and Ecosystem; WLE Technical Report; International Water Management Institute: Colombo, Sri Lanka. Available at <https://wle.cgiar.org/pilot-evaluation-index-based-flood-insurance-bihar-india-lessons-experiences>

GOI. All India Report on Agricultural Census of India 2010-11; 2015. Agriculture Census Division Department of Agriculture, Cooperation and Farmers Welfare Ministry of Agriculture and Farmers Welfare Government of India. Available online: <http://agcensus.nic.in/document/ac1011/reports/air2010-11complete.pdf> (accessed on 1 June 2019).

Hazell, P. Anderson, J. Balzer, N. Hastrup Clemmensen, A. Hess U. and Rispoli. F. 2010. The potential for scale and sustainability in weather index insurance for agriculture and rural livelihoods. International Fund for Agricultural Development and World Food Programme. 2010. Rome. Available online: <https://www.ifad.org/documents/38714170/40239486/The+potential+for+scale+and+sustainability+in+weather+index+insurance+for+agriculture+and+rural+livelihoods.pdf/7a8247c7-d7be-4a1b-9088-37edee6717ca> (accessed on 1 April 2019).

Annex Table 1. Details of KILs held in Patna and Muzaffarpur

Respondent Name	Designation	Organization	Location
Mr. Amith Richi	Manager	HDFC, Patna	Patna
Mr. Anupam Jha	Manager	HDFC, Patna	Patna
Dr. D.M. Divakar	Professor	A.N. Sinha Institute of Social Studies	Patna
Mr. Aditya Ranjan	Agric. Coordinator	Block Agric. Office	Muzaffarpur
Mr. Sanjay Paswan	Kishan Salaka, Belaur	Block office	Muzaffarpur
Mr. Praveen Kumar Singh	Chairman	PACS, Belaur	Belaur village
Mr. Niyaz Ahamed	Ward member	Village Panchayat	Bhatgama village
Dick Vijey Singh	Village head	Village Panchayat	Gangeya village
Mr. Rakesh Kumar	Village head	Village Panchayat	Madhopur village
Rabeetra Kumari	Village Resource person	Jeevika project	Harpur village
Panchu Sahri Patari	Village head	Village Panchayat	Patari village

Annex Table 2: Details of FGDs held in the pilot villages

Name of pilot village	Type of the village	Type of the group	No. of participants
Ajitpur Bakuchi	IBFI pay-out village	1. Payout receivers (men) 2. Payout receivers (Women) 3. Non insured farmers	07 03 02
Andama	IBFI none pay-out village	1. Insured men farmers 2. Insured women farmers	04 03
Barri	IBFI none pay-out village	1. Insured men farmers 2. Insured women farmers	12 02
Bhatgama	IBFI pay-out village	1. Women headed households 2. Men farmers	05 06
Gangeya	IBFI none pay-out village	1. Insured men farmers 2. Insured women farmers	08 03
Harkhauli	IBFI none pay-out village	1. Insured women farmers 2. Insured men farmers 3. Non insured farmers	05 04 02
Harpur	IBFI none pay-out village	1. Insured women farmers 2. Insured men farmers	02 03
Kalyanpur	IBFI none pay-out village	1. Insured men farmers 2. Non insured women farmers	04 02
Ladaur	IBFI none pay-out village	1. Insured men farmers 2. Women headed households	15 04
Madhopur	IBFI none pay-out village	Insured men farmers	08
Patari	IBFI none pay-out village	A mix of insured men and women farmers	09

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