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IMPACT ASSESSMENT PLAN

The Philippines

Irrigated Rice Production Enhancement Project (IRPEP)

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Introduction

This document outlines the intended strategy for conducting an ex-post, mixed methods impact assessment of the Irrigated Rice Production Enhancement Project (IRPEP), a sub-programme of IFAD's Rapid Food Production Enhancement Programme (RaFPEP). The IRPEP sub-programme was implemented in the Philippines between 2011 and 2015, immediately following the completion of the two-year RASSFIP sub-programme. Whilst another sub-programme of RaFPEP – the Rapid Seed Supply Financing Project (RaSSFiP) – concentrated on emergency relief in response to high food prices in the form of Certified Paddy Seed distribution, IRPEP focused on improving irrigation and rural infrastructures, strengthening of Irrigators' Associations, and the provision of production inputs and related support services and of marketing and processing facilities. The purpose of this impact assessment is to identify robust estimates of IRPEP's impact on key impact indicators as well as answer key questions on the programme's success.

The total approved budget of the RaFPEP programme as a whole was US$42.1 million, consisting of a US$15.9 million loan from IFAD, a US$14.1 million grant from the European Union, and a US$12.1 million grant from the Government of the Philippines. The primary expenditure from this budget was the procurement and distribution of the Certified Paddy Seeds conducted under the RaSSFIP sub-programme ($22.2 million), followed by the Community Irrigation System infrastructure improvements conducted through IRPEP ($6.7 million). The project operated in Regions VI, VIII and X of the Philippines.

Since RaSSFIP was offered to smallholder farmers across the country, it is not possible to identify a reasonable counterfactual of non-RaSSFIP beneficiaries. The programme was also an emergency response to high food prices and less focused on long-term impacts. As such, the focus of the impact assessment is on the IRPEP sub-programme only. IRPEP was implemented in Regions VI, VIII and X of the Philippines, to a sub-sample of the smallholder farmers who benefitted from RaSSFIP, and consisted of five components: the strengthening of Irrigator's Associations (IAs), the rehabilitation of Communal Irrigation Systems (CISs), the provision of buffer stocks of Certified Paddy Seeds, the provision of Farmer Field Schools (FFSs), and measures to produce increased benefits from market participation including training and improvement of post-harvest facilities and management. However, the provision of buffer stocks of seeds and FFSs were also being provided to the majority of non-IRPEP farmers in the programme regions by the Government of the Philippines, thus the lack of a suitable counterfactual for these components meant the assessment of their impact was not feasible.

Conducting an impact assessment of this programme represents the increasing efforts being made by IFAD and the wider development community to effectively measure the impact of agricultural development interventions, aiming to build upon a hitherto neglected area of research (World Bank, 2011). Conducting effective impact assessments serves the dual purpose of upholding accountability and informing ongoing improvements to programme implementation (Gertler, 2011), benefits that apply both to IFAD and beyond. With specific regard to IFAD, this assessment constitutes part of a portfolio-wide set of impact assessments that will be used to assess the overall impact of IFAD projects, due to be completed by the end of its current replenishment period in 2018. This specific impact assessment will involve collecting both quantitative and qualitative data from programme and control participants, with the quantitative data being analysed using statistical matching in order to produce robust estimates of the programme's impact.

Theory of change and main impact assessment questions

In order to produce a reliable assessment of this programme's impact, as well as to uncover the processes that may have shaped it, a strong understanding of how the programme is intended to work is imperative. Once this understanding has been established, the logical impact assessment questions can be identified, along with the appropriate intermediate and final indicators, against which the "story" of IRPEP's impact can be built. Accordingly, this section will first clarify the logic of the programme by mapping its theory of change, and will then present the key impact assessment questions that arise from it.

a. Understanding the IRPEP programme

Both of the sub-programmes of RaFPEP sought to address the fundamental development issue of low agricultural productivity amongst smallholder rice farmers. However, whilst the RaSSFIP sub-programme sought to stimulate a short-term boost through providing support related to one specific input, seeds, in order to urgently address the food price crisis that was affecting many low income countries at the time of the programme's implementation (Evans, 2008; Headey & Fan, 2008), IRPEP was designed to stimulate a sustainable, long-term increase in productivity through providing multi-faceted support relating to inputs, capacity and organisation. The target of the IRPEP activities were Communal Irrigation Systems and their members, where the primary activity was paddy farming and where irrigation water was unavailable or inadequate.

Presented in Figure 1 is the theory of change for the activities of the IRPEP programme that will be evaluated through this research, which has been validated by the staff of the programme. This diagram maps the main intended causal mechanisms that are expected to be activated by the activities of the programme, and was developed using project documents, the surrounding literature, discussions with programme staff and beneficiaries, and logic.

Figure 1: Theory of change of IRPEP activities

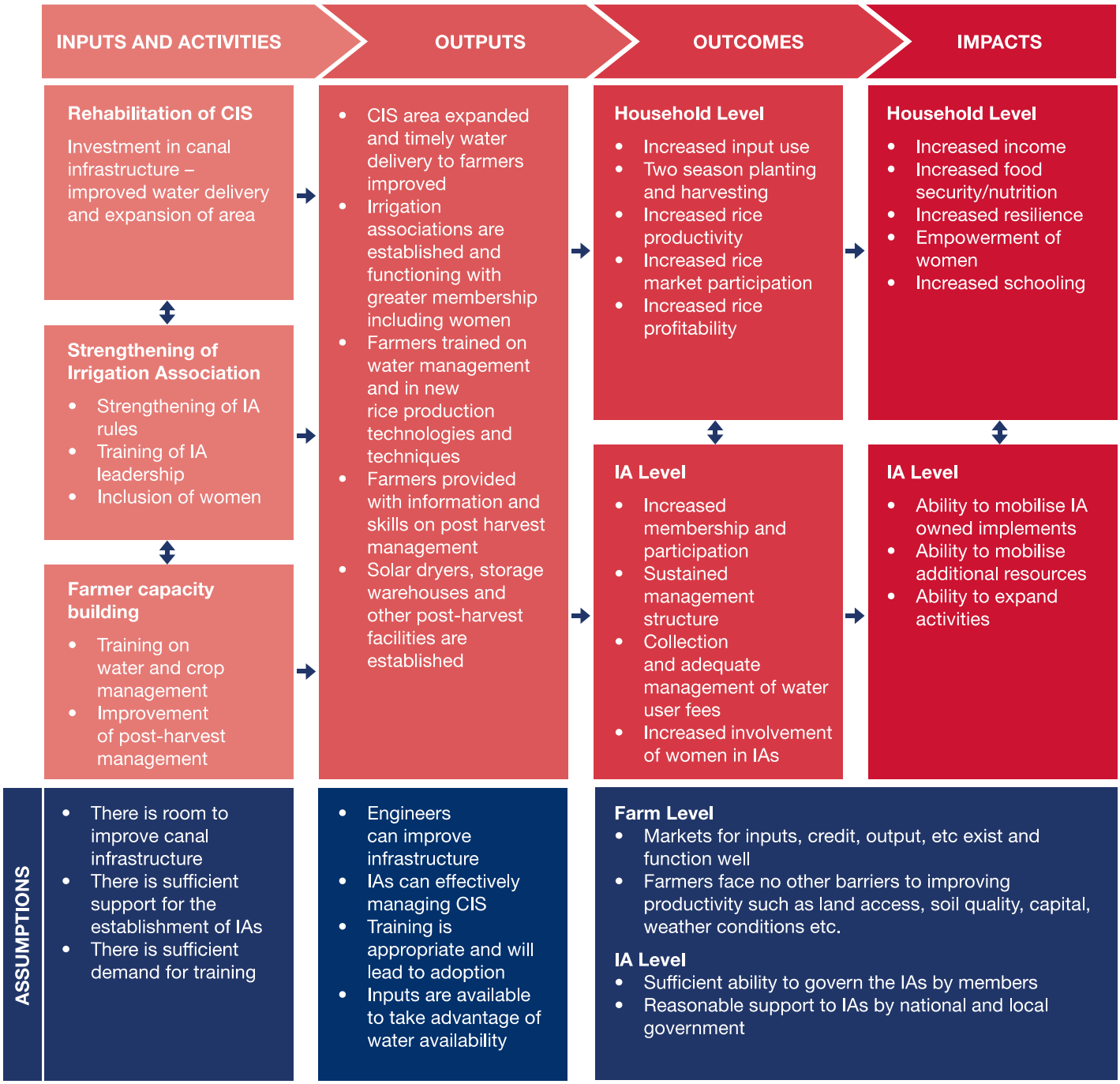

Figure 1 presents the expected chain of effects that will be activated by the IRPEP activities upon implementation, concentrating on the three sets of activities that are the focus of this impact assessment. In terms of the rehabilitation of CISs, it is expected that this will serve to expand the amount of land covered by the systems and to improve the quantity and reliability of water supply, which will lead to improved productivity and, hence, improved income and food security (Knox et al., 2013). The strengthening of IAs is expected to improve the management and leadership relating to the CISs, which is expected to, again, improve productivity through improving the supply of water for irrigation (Bagadion & Korten, 1991; Hamdy et al., 2009), as well as to improve the involvement of women, leading to increased gender equality and greater empowerment of women. The capacity building of the farmers in relation to their post-harvest activities is expected to lead to increased efficiency and profitability of their agricultural economic activities, leading to increased income (Brenndorfer et al., 1985; IFAD, 2003; Islam & Grönlund, 2010). This increase in productivity, income and food security is then expected to boost educational enrolment, as households are better able to fund their children's education (Shultz, 2001; Huisman & Smits, 2009), their resilience to shocks such as drought and crop disease (Frankenberger et al., 2012), and their nutrition (Godfray et al., 2010).

Although there are such linear causal pathways that are expected to be activated by the IRPEP activities, providing all of these activities together provides a framework of support, within which the activities are interlinked and complimentary. For instance, combining the CIS rehabilitation and IA strengthening together allows for better maintenance of the CIS by the better organised IAs, and more motivation to participate in the IA training from a well-functioning CIS, both of which would be expected to bolster, and increase the sustainability, of the productivity gains of beneficiaries, with the training on water and crop management providing an additional facilitating element to the improvement of this outcome. In addition, the combination of increased productivity and improved marketing capacity means that the incomes of beneficiaries is expected to receive a double-boost, with improved incomes feeding back into the chain in the form of increased availability of capital to invest in productivity and marketing. Finally, it is expected that strengthened IAs will have greater capacity to improve investment in the CIS, through both the informed investment of swelled CIS member fees, and through their improved ability to attract further external investment, thus serving to further supplement the improvements in water supply, productivity, and the availability of post-harvest processing facilities.

An important additional part of this exercise was to explicate the assumptions upon which the expected causal mechanisms are contingent, as well as to identify the potential effects experienced by non-beneficiaries. It is important to recognise these, as incorporating them into the impact assessment will help to clarify the processes that have shaped the observed impacts, and will help to develop a holistic picture of the programme's impacts. In terms of the assumptions, these revolve around the activities being context-suitable, there being demand and subsequent uptake of these activities, and that beneficiaries face no additional, unaddressed barriers to the intended impacts being achieved. With regard to the potential spillovers, as all farmers within beneficiary CISs were offered IRPEP support, it is likely that the impacts will mainly be internalised within these beneficiary CISs. However, there is still potential for both positive and negative spillovers to the local economy, with strengthened market participation being known to increase agricultural employment (Headey et al., 2010), whilst also having the potential to force non-beneficiary farmers out of the market. In addition, there is evidence to suggest that farmers who have received training through the programme may pass this knowledge on to non-trained farmers (Witt et al., 2008).

b. Impact assessment questions

As is highlighted through the IRPEP theory of change, there are two main levels of expected impact of the programme, that of the household and the IA. Accordingly, this impact assessment must assess the extent to which both of these levels of impact have been achieved. With regard to the former, based on the expected outcomes, and the assumptions that are required to hold in order for the outcomes to be achieved, which revolved around additional un-addressed barriers faced by the beneficiaries, the following impact assessment question was devised, and consequently approved by the programme staff:

1. *Does IRPEP have the intended impacts on rice productivity, farmer income, food security, etc.? Are there constraints that limit farmers from achieving these objectives that should be addressed?*

With regard to the expected impacts at the IA level, the following set of primary impact assessment questions were devised, and again, approved by the programme staff:

2. *Does IRPEP strengthen the capacity of Irrigators' Associations in a manner that allows the associations to be sustainable, work with local governments, take collective actions beyond managing irrigation systems, etc.?*
3. *What role do water user fees play in the success of the IAs?*
4. *What role do local governments play in the success of IRPEP?*

In seeking to assess impacts on the indicators noted in the impact assessment questions, this impact assessment coheres with the foci of both the IFAD Strategic Framework 2016-2025 and the Government of the Philippines' Development Plan 2011-2016. In terms of the former, this has the improvement of productivity capacities and of benefits from market participation as two of its strategic objectives, plus access to agricultural technologies, improved nutrition, and improved rural infrastructure, as three of its thematic areas. For the latter, two of its higher level outcomes are stated as the improvement of income generation from the agricultural sector, and improvement in food security.

Impact assessment design

a. Overall approach

This impact assessment will collect quantitative data at the household and the IA levels, from both IRPEP and non-IRPEP beneficiaries, and will collect qualitative data from IA members and project staff. After which, quantitative estimates of the programme's impact will be produced, supplemented by qualitative insights that will serve to verify the quantitative findings and to offer deeper insights of programme experiences.

The quantitative impact estimation will form the main focus of the impact assessment, with the methodology consisting of a two-stage statistical matching design, used to construct a robust counterfactual group of non-IRPEP households. The first stage will involve identifying IRPEP and non-IRPEP CIS that share similar baseline characteristics related to both programme selection and outcomes. This will be done by assigning a propensity score, created using available baseline data, to all of the CIS based in five of the six IRPEP provinces, plus those from two additional non-IRPEP provinces in Region VI, which were added because of a lack of non-IRPEP CIS in the region's one treated province (See Table 1 for the distribution of IRPEP and non-IRPEP CIS within the eight focal provinces)[1]. No data will be collected from Lanao del Norte province in Region X due to conflict-related safety issues, however, as can be seen from Table 1, IRPEP had a relatively minor presence in this area. Using these scores, the set of CIS will be trimmed of all those IRPEP and non-IRPEP CIS that do not have an adequate match in the opposing group[2]. This trimmed list will then be passed to the programme staff who will select the final group of IRPEP and non-IRPEP CIS where households will be selected for interviews.

Table 1: Geographical distribution of IRPEP beneficiaries

Province	No. IRPEP CISs	No. non-IRPEP CISs
Region VI		
Antique	63	0
Aklan	0	27
Capiz	0	29
Region VIII		
Northern Leyte	12	184
Northern Samar	4	27
Western Samar	11	18
Region X		
Bukidnon	18	20
Lanao del Norte	4	31

[1] It was decided that sufficiently similar CISs would be taken from the same provinces in which the programme was implemented, and in the case of Region VI, the two additional provinces were chosen based on their proximity to the IRPEP province and on their poverty prevalence level, which was a key criteria in the selection of provinces during the implementation of IRPEP.
[2] The specific matching method was to identify the five nearest matches for each IRPEP CIS from the group of non-IRPEP CIS, that are within a maximum distance from the IRPEP CIS's score.

Once the data has been collected, the second stage will involve producing the final impact estimators through a second round of Propensity Score Matching. This will involve calculating the average difference in the outcomes of pairs of treatment and control households, matched according to baseline household-level data that is relevant both to their likelihood of selection and linked with the focal outcomes of the impact assessment. The effectiveness of this latter round of matching is contingent on a large number of high-quality matches being available from the sample of IRPEP and non-IRPEP households, which explains why the first round of matching will be conducted: so that the likelihood of good matches being available is maximised.

As aforementioned, this impact assessment will not apply to two of the programme's components, the provision of buffer stocks of seeds and of FFSs, due to these services also being provided to non-beneficiaries in the programme areas. Accordingly, the specific comparison on which this impact assessment will be based will be between farmers that have received a "status quo" support service (i.e. FFSs and certified seed buffer stocks) between 2011 and 2015, and those that have received CIS rehabilitation, IA strengthening and marketing support in addition to the "status quo" service. The impact estimates, therefore, will quantify the additional benefit produced by these three components.

b. Addressing potential selection bias

The decision to employ statistical matching to produce the counterfactual used by this impact assessment is driven by the non-random selection of beneficiaries by IRPEP, which raises the risk of selection bias. A low risk of selection bias when comparing treatment and control participants is key to producing a robust quantification of programme impact, with a high risk occurring when the selection of programme participants is linked to the outcomes that the programme intends to change, and the constructed counterfactual does not match the sampled treatment participants in these areas. Through the assessment of programme documents and discussions with programme staff, it was found that provinces and CISs that had a high incidence of poverty and low rice productivity were targeted for inclusion in the programme, two of the main indicators that the programme intends to improve. Therefore, there is potential for selection bias if the identification of control participants does not take this into account, with a randomly selected group likely to have higher baseline levels of these indicators, thus biasing the comparison of these indicators at the endline stage.

When there is a risk of selection bias in an ex-post impact assessment, there are a number of techniques available to address it. For this assessment, the specific statistical matching method used to produce the quantitative impact estimates will be Propensity Score Matching (PSM), which involves only comparing treatment and control households that are matched according to baseline variables linked to both the likelihood of being selected for the programme, and with the focal impact outcomes. The success of the PSM method is dependent on high-quality matches being produced from within the sampled treatment and control groups, therefore, a preliminary round of PSM will be incorporated into the sampling strategy, ensuring that sufficiently similar samples are available for the second round of matching. Other common methods include the difference-in-differences, regression discontinuity, and instrumental variable techniques, however these were not used as they respectively require baseline data on the focal outcomes, a cut-off threshold around which selection is based, or a suitable variable that can be instrumented for treatment, all of which were not available or appropriate in this case.

c. Potential spillover effects

There are two important considerations regarding potential spillover effects: the method required to capture these, and the risk they pose to the formation of a valid counterfactual group. With regard to the former, it is possible to produce robust quantifications of such effects on non-beneficiaries, however this often requires considerable additional resources, mainly through the larger quantitative sample size required. And, as it has been noted from studying the programme's theory of change that potential programme spillovers are minor and few, something which was corroborated during discussions with programme staff and beneficiaries, it was decided that the capturing of these effects will be restricted to the qualitative part of this assessment. Incorporating the capturing of spillover effects into the qualitative data collection and analysis, although producing less conclusive insights, has a resource requirement that is more reflective of the salience of this area of enquiry to the overall impact assessment.

With regard to the risk posed to the construction of a valid comparison group, this low propensity for spillovers means this potential issue is minor. When potential spillovers are high, it is imperative that comparison households are selected from outside the spillover "splash-zone", otherwise there is a risk that the households will be contaminated by these effects. Therefore, as the risk is low, control households, if identified to be sufficiently similar, can be taken from neighbouring areas to beneficiary CISs without the risk that these will also have received effects from the program.

Sampling and data collection

a. Key indicators

In terms of the specific indicators that will be assessed in order to answer these questions, Table 2 outlines those covering the primary expected impacts of the programme, followed by the key intermediate household and IA-level indicators outlined in Table 3.

Table 2: List of key impact indicators and their intended measures

Indicator	Measure
Income (by source)	Amount of income (₱), disaggregated by source according to LSMS method
Food security	Number of meals per day, Food Insecurity Experience Scale (FIES)[3]
Nutrition	Dietary Diversity Index score[4]
Resilience	Exposure, sensitivity and adaptive capacity indicators
Women empowerment	Index based on a number of relevant elements
School enrolment/attendance	Child enrolled/attends

Table 3: List of key intermediate impact indicators and their intended measures.

Indicator	Measure
Household Level	
Irrigation Area	Area under irrigation (ha)
Input use	Value of inputs used (₱), disaggregated by source according to LSMS method
Rice productivity	Yield per hectare (cabans /sacks, 1=50kg)
Rice market participation	Value of rice sales (₱), % sold
IA-level	
Farmer IA participation	Farmers in IA to CIS (%)
Female IA participation	Females in IA (%)
Frequency of IA meeting	Number of meetings per year
Irrigation area	Area under irrigation (%)
IA managed implements	Implements managed (#,₱)
Outside support	Support since 2010 (#,₱)

[3] http://www.fao.org/in-action/voices-of-the-hungry/fies/en/
[4] http://www.fao.org/3/a-i1983e.pdf

b. Quantitative data collection strategy and instruments

i. Sampling strategy

There are two important aspects that a sampling strategy must sufficiently address, it must firstly ensure that the overall sample is representative of the population to which the impact estimation is intended to be applied. And secondly, when the intention is to use statistical matching to produce the impact estimates, that the treatment and control households sampled are similar enough that high-quality matches can be produced.

In terms of achieving representativeness, as this impact assessment intends to assess the overall impact of the IRPEP programme, its population of interest is the entire target population of the IRPEP programme. This consists of all smallholder farmers who are members of a CIS in the IRPEP-implemented regions (VI, VIII and X). As can be seen from Table 4, the programme was implemented more intensively in Region VI, compared to regions VIII and X, meaning a truly representative sample would reflect this by sampling a proportionately higher number of households from Region VI. However, a lack of sufficiently matched treatment and control households for Region VI meant that a higher number of households could not be taken from this region.

Table 4: Spread of beneficiaries by region

Region	No IA's	Total IA members	Total CIS farmers	No. Provinces	No. Municipalities
VI	63	6,307	7,199	1 – Antique	17
VIII	27	3,263	3,881	3 – Western Samar, Northern Samar, Northern Leyte	21
X	22	2,626	3,154	2 – Bukidnon, Lanao Del Norte	11

Taking regions into consideration is key to this impact assessment, with programme document analysis and discussions with programme stakeholders both identifying that a divergence of outcomes across regions is a distinct possibility. Namely, it was found that implementation in Region VI started around one year later than in Regions VIII and X, and also those in Region VI are likely to have received limited marketing support from the programme compared to the other regions. In addition, Region VIII was severely affected by a typhoon during the course of the programme, and consequently received additional supports in the form of repairs to damaged CISs and storage facilities. If this possible impact heterogeneity did indeed materialise, a proportional sample would allow for the overall impact estimators to attribute the appropriate weight to the impacts experienced in each region. In its absence, the assessment will account for this by stratifying the sampling by region and collecting samples of households from each region that are large enough to estimate the specific impact for each region, as well as the overall impact of the programme for the three regions combined. Through this approach the overall impact of the programme will not be blind to the possible heterogeneity of impact across regions.

Within each region, an equal number of treatment and control households will be selected, and the same CISs will be used for both the household and the IA surveys. For the household survey, the sampling strategy will mirror the programme's design in that, as the programme was administered by selecting CISs and then offering services to all of its members, the selected treatment and control CISs will have survey participants randomly selected with replacement from a list of all of their members. As noted, the group of CISs to be sampled will be constructed using Propensity Score Matching to trim the sample, and then asking programme staff to select the final CISs from the list. For regions VI and VIII, a total of 18 households will be taken from each of the 20 IRPEP and 20 non-IRPEP CIS that will be selected, whilst for region X, a total of 21 households will be surveyed from each of the 16 IRPEP and 16 non-IRPEP CIS that will be selected. The number of selected CIS is lower in region X due to security and accessibility issues that ruled out some CISs from the selection process. In case there are less than the required number of households in a selected CIS, a higher number of households will be sampled from another selected CIS in the region to compensate.

Key to identifying sufficiently matched beneficiary and non-beneficiary CISs is a clear understanding of how the former were selected for programme inclusion, which would facilitate the selection of the appropriate baseline matching variables. Through studying programme documents and conducting in-depth discussions with programme staff, the key factors that dictated CIS selection were identified as being the following:

- Baseline annual paddy productivity below 3.78MT/ha
- Average landholding size of below 0.76ha
- Supply of water through CIS is low and/or inadequate
- High poverty incidence
- Irrigation potential of CIS
- Feasibility of implementing agency to provide support
- Willingness and capacity of LGU to provide timely counterpart funding

Unfortunately, baseline data was not available for all of these criteria, with a varying amount of data available across regions. Of the data that was available, the variables listed in Table 5 were used to carry out the matching and the trimming of the CIS.

Table 5: Matching variables used for CIS matching

	Matching Variables
Region VI	Number of hectares covered by CIS
	Percent of IA members to CIS members
	Time taken to drive to regional capital
Region VIII	Percent of CIS land operational
	Number of hectares irrigated during wet season
	Average rice yield (kg/ha)
	Time taken to drive to regional capital
Region X	Number of hectares covered by CIS
	Number of IA members
	Time taken to drive to regional capital
	Average rice yield (kg/ha)

ii. Sample size calculations

The basis of quantitative analysis for impact assessments is determining whether any difference between the treatment and control groups is due to chance or caused by the focal intervention. However, the ability to conclude with a certain degree of confidence that a difference is not due to chance is curtailed by the size of the sample being used, meaning that a difference that is indeed an impact of the programme may incorrectly be attributed to chance if the sample size is not large enough to generate the required confidence level. Accordingly, calculations must be made to determine the required sample size needed in order to detect the minimum meaningful change in the focal outcome variables of an impact assessment.

The standard approach to estimating the required sample size is to conduct a calculation incorporating various components of the focal comparison, including the minimum expected change in the focal outcome variable, which produces a recommended sample size. And in the case of an evaluation with multiple focal outcomes, this calculation should be conducted for all the outcome variables and an average of the recommended sample sizes taken. The following equation from World Bank (2007) was used to determine the appropriate sample size for the household survey.

(1) $$N = \left[\frac{4\sigma^2(z_{\alpha/2} + z_{\beta})^2}{D^2}\right]\left[1 + \rho(m-1)\right]$$

Where σ= the standard deviation of the baseline outcome variable; $z_{\alpha/2}$ = the critical value of the confidence interval, z_{β} = the critical value of the statistical power, *D*= the minimum change in the baseline mean of the focal outcome variable that the analysis can detect, ρ= the intra-cluster correlation of the unit of analysis, *m*= the number of units to be sampled within each cluster.

The adjustment for data clustering, which incorporates the intra-cluster correlation, is necessary when there is a likelihood of correlation of relevant variables within groups of observations in a data set. When this occurs, each observation presents less unique data, and so the sample must be inflated accordingly. In the case of this impact assessment, this is required because of how the programme was implemented. With the main focal outcomes being productivity and income level, there would be a high likelihood that farmers within the same CIS, sharing the same infrastructure and the same IA, would be correlated for these outcomes even without the programme. However, with the programme being administered at the CIS-level, meaning all members would have attended the same training sessions etc., this likelihood becomes magnified. Accordingly, the intra-cluster correlation parameter in the equation will be estimated at the CIS-level.

Regarding the parameters of the equation, for some there are standard figures than can be used, and for others, informed estimation is required. For the critical values of the confidence interval and the model's power, the standard figures were used relating to a two-tailed test such as will be conducted for this assessment. And for the minimum change in the baseline mean and the standard deviation of the baseline mean, these were estimated based on the most similar accessible existing dataset for which these figures were available, the dataset in question being a 2011 survey of 95 smallholder rice farmers in the Central Luzon region (Moya et al., 2015). From discussions with the programme staff, if was suggested that a minimum change in the baseline mean of 10% was a reasonable estimation to be used. Unfortunately, there was no available data on the other key outcome variables of income and food security in this dataset, tehrefore the required sample size was only estimated for rice yield per hectare. Ideally, the ICC would also be estimated using such existing data, however, no dataset was readily available that allowed the calculation of the clustering of rice yields or income at the CIS-level, therefore a standard recommended ICC estimation was used. The parameters used were the following:

D = 387.9 kg/ha $\quad z_{\beta}$ = 1.28

σ = 1,165 kg/ha $\quad m$ = 19

$z_{\alpha/2}$ = 1.96 $\quad \rho$=0.05

Using these parameters, a sample size of 595 households was recommended in order to detect a 11% change in the baseline mean of rice yield per hectare. As this impact assessment will endeavour to estimate region-specific impacts of the programme, this recommended sample size will apply to each region, giving an overall recommended sample size of (595x3) 1,962 households. However, as PSM will be used to produce the impact estimations, which will involve some households without a sufficient match being dropped from the sample, 10% will be added to the sample size, and in order to account for households being unavailable, we will add a further 10% to the planned sample size. Thus, with an inflation of 20%, the final required sample size is given as 2,142 households. Dividing the sample evenly between treatment and control groups means that from each region there will be a total of 357 treatment and 357 control households.

c. Qualitative data collection strategy and instruments

i. Sampling strategy

To serve the dual purpose of validating the findings from the quantitative analysis and to provide additional learning from detailed programme experiences, the qualitative sample will consist of Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) with key members of the programme staff and both treated and non-treated Irrigation Associations (IAs). The coverage of these groups and the instruments used are presented to Table 6, this strategy was constructed by

mapping the institutional structures at each level and identifying, in collaboration with programme staff, the key decision-makers and implementers, from whom the most valuable insights can be gained.

Table 6: Qualitative sampling strategy and instruments

Group	Instrument
Programme staff	**Department of Agriculture**
	1x FGD with national M&E officer, agricultural engineers, admin and finance officer, and Institutional Development Officer
	1 x KII with National Programme Coordinator
	Regional Offices
	3x FDG (one per region) with regional M&E Officer, regional Agricultural Engineer, regional Admin and Finance Officer and regional Institutional Development Officer
	3 x KII (one per region) with Regional Programme Coordinator
	6 x KII (one per IRPEP province) with Provincial Programme Coordinator
IA members	**For a sample of 12 IAs**
	1x FGD with IA officers
	1x KII with IA President

ii. Focus of instruments

The following topics will be discussed with the programme staff and IAs during the FGDs and the KIIs:

- Description of programme implementation (what activities were administered? Selection of beneficiaries? Level of participation of beneficiaries offered the programme)
- Barriers to participation (Were specific groups excluded either by programme staff or self-selection? Was a lack of support from Local Government Units an issue?)
- Barriers to success (Were there any factors that hindered increases in productivity, income generation, gender empowerment or resilience to shocks?)
- Suitability of programme activities (Were they suited to the context? Were they adopted by beneficiaries?)
- Possible spillovers (Was knowledge transferred by trained beneficiaries? Were non-beneficiaries placed at a disadvantage?)
- Potential improvements

Budget, deliverables and workplan

a. Budget

After following the formal procurement process of IFAD, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), a Philippines-based research organisation, was selected to conduct the quantitative and qualitative data collection. Table 7 provides a breakdown of the budget agreed with them, as well as the budget required for additional work conducted by IFAD.

Table 7: Breakdown of budget for IRPEP impact assessment

Activity	Cost (US$)
Data collection: Itemised costs provided by SEARCA, the selected local data collection firm	
Inception and mobilisation	
Remuneration	14,429
Out-of-pocket expenses	2,174
Sub-total	16,603
Pilot testing and field data collection	
Remuneration	41,035
Out-of-pocket expenses	61,449
Sub-total	102,484
Preparation of final dataset and final report	
Remuneration	21,931
Reimbursables	2,974
Sub-total	143,992
Data analysis and report production: To be conducted by the RIA division of IFAD	
Data analysis (30 days at US$180 per day)	5,400
Report production (30 days at US$180 per day)	5,400
Sub-total	10,800
Total cost = US$154,792	

b. Key deliverables

Upon completion of this impact assessment, the following main deliverables will have been produced:

1) Finalised and cleaned household and CIS quantitative datasets and transcripts of IA and programme staff focus group discussions and key informant interviews
2) Impact evaluation report, detailing findings from analysis of quantitative and qualitative data and outlining learning produced from these findings

c. Timeline

Table 8 details the expected timeline for the completion of the IRPEP impact assessment, based on the agreement made with SEARCA.

Table 8: Expected timeline for completion of project

Activity	Timeframe
Data collection	
Review of survey instrument and strategy, recruitment of enumerators, enumerator training preparation	9th January – 19th February (6 weeks)
Training of enumerators and pilot testing	20th February- 5th March (2 weeks)
Conducting of quantitative and qualitative data collection	6th March – 30th April (8 weeks)
Processing of collected data, review by IFAD, submission of final datasets and transcripts	1st May – 4th June (3 weeks)
Data analysis and report production	
Data analysis	5th June – 2nd July (4 weeks)
Completion of final report	3rd July – 30th July (4 weeks)

d. Composition of IA team and responsibilities

IFAD staff

Paul Winters, Project Lead: Coordinate and supervise all aspects of the impact evaluation, from data collection to the production and dissemination of the final report.

Aslihan Arslan, Project Co-lead: Support coordination and supervision of all aspects of the impact evaluation, from data collection and econometric analysis to the production and dissemination of the final report.

Daniel Higgins, Research Assistant: Provide technical assistance in the planning, implementation, data analysis and reporting of the impact assessment.

Silvana Scalzo, Administrative Assistant: Provide support in the procurement of data collection firm and with other administrative aspects such as arranging travel to the field

Tawfiq El-Zabri, **Omer Zafar**, **Fabrizio Bresciani**, IFAD HQ-based regional staff: Assist with information on the project and liaising with IFAD and non-IFAD staff based in the Philippines

Jerry Pacturan, Yolando Arban, **Philippines-based current and former regional staff**: Provide in-country support for coordination of data collection and liasing with Project Management Unit

SEARCA staff

Lope Santos, OIC and Program Specialist: Serve as main point of contact with IFAD in the arrangement of the contract and the organisation of the data collection thereafter.

Walfredo R. Rola, Project Manager: Responsible for planning, supervising and managing the entire data collection process with the assistance of the field manager. Will be in close supervision for the data collection and processing activities, will also serve as the main liaison with Department of Agriculture and RIA staff.

Roselle V. Collado, Data Manager: Responsible for directly supervising the data collection, data entry and quality control processes during the field activities.

Filma C. Calalo, Field Manager: Responsible for directly planning, supervising and managing the field work, being based in the field with the data collection team for the duration of the project.

Philippines Department of Agriculture staff

Ada Estrada, Project Management Staff: Serve as main point of contact between IFAD and the Philippines government. Assist with organisation of data collection, provide information on the project as required, and assist with validation of findings.

e. Validation of results and dissemination plan

Upon completion of the final report, the findings will be validated by the Project Management Unit and other key stakeholders. In terms of dissemination, a plan for this will be compiled with the assistance of the PMU and IFAD staff, and will involve communicating the findings in various fora at increasing levels of the hierarchy of stakeholders.

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