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Incentive mechanisms & plan for implementation

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Preface

The project “Implementing incentives for climate resilient housing among the urban poor in Vietnam” is funded by the Nordic Development Fund and implemented by Vista Analysis in cooperation with ISET Vietnam, Hue College of Economics at Hue University, and Women’s Union of Danang, Vietnam. The project started in late April 2016 and is scheduled to run to late October, 2018.

This is a report on the incentive mechanisms that will be implemented and tested during the project, as well as an overview of the plan for implementation and empirical strategy for evaluation of impact for the first round of incentive mechanisms to be implemented in Milestone 3. It builds on the Inception report from Milestone 1, and constitutes a main part of the reporting for Milestone 2 of the project.

Project Manager

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Content

1. Introduction

This report introduces the incentive mechanisms to be implemented and tested during the project, as well as the implementation plan and design of evaluation, monitoring and data collection. The questionnaire for the baseline survey is included as an annex to the report, as well as the updated work plan for the rest of the project.

The purpose of the project is to develop and test sustainable and innovative incentives for investment in storm resistant housing suitable for different segments of the low-income housing market. The incentive mechanisms and the plan for implementation, including the empirical strategy for testing the incentive mechanisms, have been developed during the second reporting period of the project, and conclude Milestone 2. The design of incentive mechanisms is based on the research in Milestone 1, where we identified important barriers to investing in climate resilient housing (see chapter 3 of the Inception report). The barriers include limited access to credit (credit market barriers), various information barriers and insecure property rights.

Ideally, we would have designed incentive packages and an empirical strategy so that we could investigate the relative importance of each of these barriers. However, there is a clear trade-off between the number of different incentive packages to be tested, and the robustness of the empirical strategy, for a given budget. In other words, to be able to investigate effects of the incentives, we need to include certain minimum sample size of households to receive incentives compared to a control group. Otherwise, observed effects (or no effects) may be due to chance or other factors than the incentives we offer in the project.

We have therefore developed two incentive packages that aim to alleviate both the credit barrier and the information barrier of near-poor households[1], to be tested in Milestone 3. In the final implementation period, we will offer an incentive mechanism for the poor households[1], who, unlike the near-poor, do not have the income generating capacity to operate a loan. This incentive package is only briefly discussed here, but will be developed in more detail during the Milestone 3 period.

The implementation of the two incentive packages to the near-poor allows us first to investigate both the necessary level of incentives to make households invest, since we are implementing two packages of different sizes. Second, we will also investigate the impact of the packages on various measures of household level resilience and overall welfare (measured by different types of indicators, such as life satisfaction), since we will implement the packages as a randomized controlled trial (se Chapter 2 for details).

[1] City poverty line = 600,000 VND/month per capita for rural area; 800,000 VND for urban area (for period 2013-2017). Urban poor households: Income per capita per month (ICM) ≤ 1,300,000 VND, Urban near-poor households: 1,300,000 VND ≤ ICM ≤ 1,690,000 VND, Rural poor households: ICM ≤ 1,100,000 VND, Rural near-poor households: 1,100,000 VND ≤ ICM ≤ 1,430,000 VND. Any revisions to these official intervals will be checked for 2017.

The implementation of the third package will allow us to further investigate the potential for combining the information incentives and technical support with other social programs targeting the group of poorer households. Impacts of this package will likely be investigated by use of qualitative methods.[2]

The incentive packages developed build on the input from the focus group discussions during the Milestone 1 period, as well as the experiences of the Women's Union from the previous revolving fund project funded by the Rockefeller Foundation and their other work throughout Da Nang. We are also building on the results from the Asian Development Bank-funded project discussed in the Inception report, and in particular the handbook from that project about storm resilient housing.

The next chapter describes the contents of the incentive mechanisms in detail, especially focusing on the two incentive packages that will be implemented in the next Milestone. In chapter 3, the implementation plan with the design of evaluation, monitoring and data collection is explained. Annexes contain the questionnaire for the baseline survey and an updated workplan for the project.

The Milestone 2 period included three activities:

- Activity 4: Identify and design potential incentive mechanisms.
- Activity 5: Develop detailed plot implementation plans, including design of evaluation, monitoring and data collection.
- Activity 6: Report on incentive mechanisms and plan for evaluation in field. Implementation plan for incentives for 70 houses.

Activity 4 was started early during the Inception phase (Milestone 1), where literature and theory behind incentives was reviewed (see Chapter 3 of the inception report). This Activity was continued during this Milestone 2 period, and, as mentioned above, completed for the near-poor group. The outputs from Activity 4 is documented in Chapter 2 of this report. The final two Activities 5 and 6 have been completed during this Milestone period, and outputs are documented in Chapter 3.

[2] The project team has discussed ethical and other concerns that make it hard to investigate impacts of incentives among the poor using quantitative methods involving randomization of which households will be able to benefit. We therefore choose an approach that is more sensitive to the vulnerability of the poorest group.

2. Incentives for investment in storm resilient housing

The purpose of the project is to develop and test sustainable and innovative incentives for investment in storm resilient housing suitable for different segments of the low-income housing market. We have developed five research questions that are key to this purpose:

1. What are the costs and benefits of investing in storm resilient housing among the poor and near poor in Da Nang?
2. What are the barriers to investment in storm resilient housing among the poor and near poor in Da Nang?
3. What incentives are needed to enable poor and near-poor households to invest in storm resilient housing?
4. What are the short-run impacts of investing in storm resilient housing on
   a) Resilience?
   b) Household welfare?
5. What are the long-run impacts of investing in storm resilient housing on
   a) Resilience?
   b) Household welfare?

Questions 1 and 2 were addressed in the first part of the project, question 1 through a previous study by the local partners (Tuan et al., 2015; Phong et al., 2016; Anh et al., 2016), and question 2 through the inception phase of the project. For question 2, three main barriers to investment were identified (see Inception Report for details):

1) Lack of access to (affordable) credit.

2) Lack of information (relating to both the benefits and costs of storm resilient housing, but also the technical aspects of the technology).

3) Insecure property rights (some households live in “development areas” and are at a risk of being relocated by the government. Households that do not have formal property rights (through payment of land use taxes and having a property title known as a “red book”) may be relocated without compensation.

The incentives and plan for monitoring and evaluation developed during this milestone period are designed with the aim of answering research questions 3 and 4. It will not be possible to answer research question 5 in the current project due to its limited duration, however the plan for monitoring and evaluation is designed in a way that makes it relatively easy to address this question through future projects.

In Milestone 3 of the project, we will focus on near-poor households[3], typically households that have the income generating capacity to operate a small loan, and that can mobilize additional funding and labor input through friends and family, once they are approved by the Women's Union to participate in the program. The WU's experience from the current revolving fund project is that the credit offered through the program acts as a lever for additional funding from other sources. An important reason for designing and testing incentives for near-poor households is that these households typically do not qualify for support from other social programs (or have normal access to funding from credit markets), but are still relatively poor and vulnerable.

Ideally, we would have designed and implemented incentive schemes/packages that allowed us to test the importance of each of the barriers to investment that was identified (credit, information and property rights). We would also have liked to test the minimum size of the incentive packages, to develop financially sustainable (efficient) packages for scaling up. However, with a limited budget, there is a trade-off between the number of incentive packages that can be tested and the robustness of the empirical strategy. Another constraint is the understandable concern of the Women's Union to avoid offering packages that differ too much to households through the program, as this may affect their relationship and future collaboration with households. In other words, the WU is concerned that the allocation of incentives may be seen as unfair.

As a compromise, we have agreed to implement and test two different incentive packages targeting near-poor households during the period of the coming Milestone 3, and spend the remaining funds (depending on the uptake of the two packages among the near poor households) on a package targeted at poor households during the Milestone 4 period of the project. As shown in the budget in Table 2.1 we will at least target 30 poor households in Milestone 4, and offer incentives to 204 near-poor households in Milestone 3. The exact size of the loans in packages 1 and 2, will be determined in collaboration with the households during the detailed assessment of each household that takes place after the households have been offered the packages, as further explained in Chapter 3. The contents and amounts in package 3 are preliminary, and will be further developed during the next milestone period.

[3] As noted in Chapter 1, we will focus on the poorer group of households through a qualitative approach to evaluation in Milestone 4.

Table 2.1 Planned contents and estimated costs of incentives for storm resilient housing

Options (target group)	Package 1 (near-poor)	Package 2 (near-poor)	Package 3 (poor)
	Per household		
Estimated average loan size	20 000 000	20 000 000	0
Monthly interest	0,0075	0,0075	-
Repayment period (months)	40	40	-
Monthly loan payments by households	580 603	580 603	-
Repayment rate	0,9	0,9	-
Avg. loan default costs	2 322 412	2 322 412	-
Technical assistance	1 000 000	1 000 000	1 000 000
Grant	0	10 000 000	25 000 000
	Per incentive package		
Information events	51 000 000	51 000 000	51 000 000
Loan administration costs	102 000 000	102 000 000	-
Number of households targeted	102	102	30
Take-up rate	1	1	1
Total cost of incentive package (VND)	491 886 074	1 511 886 074	831 000 000
Total cost of incentive package (EUR)	20 545	63 148	34 709

Note: Eur/VND exchange rate: 23 942

The total amount of loans for disbursement is planned to be about 170 400 Euros, and the total cost of all three packages that are directly covered by funds from the NDF is about 118 400 Euros. This is given the assumption of a default rate of 10 per cent on the loans disbursed, and a take-up rate of 100 per cent of both packages, which leaves

enough funding for targeting 30 poor households with package 3. The budget will of course have to be adjusted based on the actual take-up in Milestone 3.

Additional loan administration costs incur because we are only targeting 6 households per ward, which makes administration more costly than under the normal operation of the WU, where larger groups are formed in each ward, reducing transaction costs. This cost is however not relevant if the program is scaled up in the same way that the revolving fund was operated under the previous project of the WU.

The two packages targeted at the near-poor each consist of a small loan with the same repayment conditions and interest rate, as well as participation in a compulsory savings group, free technical design for retrofitting or reconstructing their house, and technical assistance by local architects and local builders trained through the program to ensure that the technical design is correctly implemented. In addition, there will be information events organized for the selected architects and local builders who are involved in the design and construction of storm-resilient houses later. The selected architects responsible for designing storm-resilient houses will work closely with Da Nang Women's Union, ISET and HCE to seek an overall agreement on the design and construction supervision of storm-resilient houses. Tentatively, the involved design architects will visit each household at least twice to formulate the design and supervise on key stages of construction (usually building of the main house structure). Local builders selected will be provided technical training, the technical handbook of storm-resilient housing design/construction[4] and technical drawings for each house. Their work will be regularly monitored by household members, Ward/Commune Women's Union staff, the involved design architects and randomly by ISET and HCE staff.

The difference between the two packages is that one package also offers a grant of 10 million VND (about 400 Euros) per household. This is about 10 per cent of the average total cost of reconstruction/retrofitting. The size of the loan in both packages is about 20 million VND. The remaining costs of reconstruction or retrofitting is covered by the households' own savings, loans from friends and family, and in-kind labor contributions, as shown in

[4] This handbook has been developed by the ADB-funded housing project in seeking the possible ways of scaling-up the storm-resilient housing models in Da Nang City.

Table 2.2.

Table 2.2 Average estimated costs per home and sources of funding for incentive packages 1 and 2

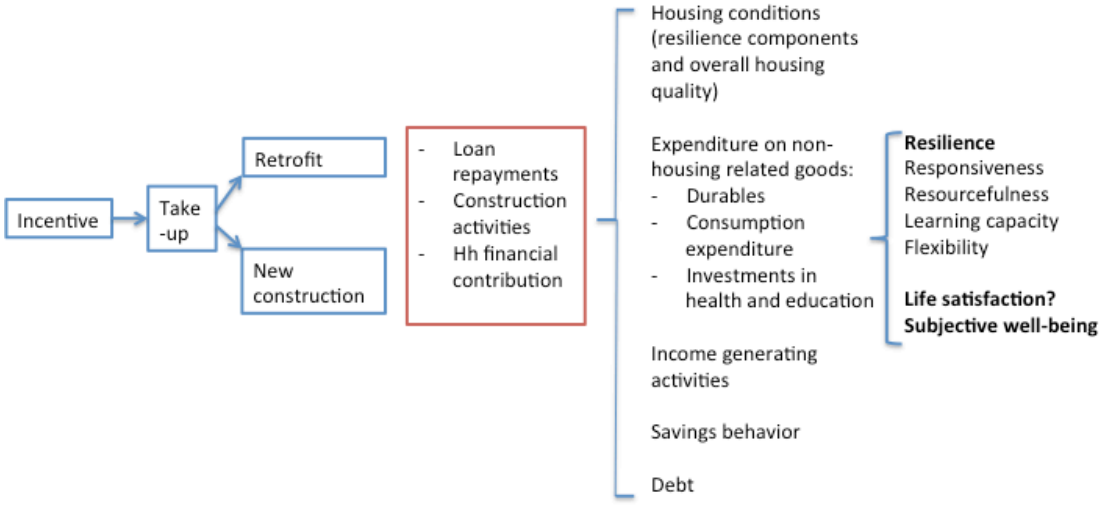
Package 1				
Item	**NCF**	**WU**	**Home-owner**	**Total**
Own contribution (cash and labor)			2 970	2 970
Loan		830		830
Loan costs	138			138
Information and technical assistance	62			62
Average cost per home	200	830	2 970	**4 000**
Package 2				
Item	**NCF**	**WU**	**Home-owner**	**Total**
Own contribution (cash and labor)			2 555	2 555
Loan		830		830
Loan costs	138			138
Grant	415			415
Information and technical assistance	62			62
Average cost per home	615	830	2 555	**4 000**

Related to research question 3, the packages aim to alleviate both the credit constraint and the information constraint of the households, so we are not able to test the relative importance of either of these constraints. Rather, we are testing the importance of subsidizing investment in storm resilient housing. One argument for offering a grant as part of the incentive packages, is that disaster mitigation is less expensive than disaster relief, which the city has on average spent 4 000 000 VND to partly support an affected family after the last four typhoons that have hit Da Nang. Another argument is that a share of the long-run costs of typhoon damage in terms of reducing investments in both physical and human capital, and thus preventing households from escaping poverty, are carried by society as a whole (Phong et al., 2014). Preventing typhoon damage by investing in storm resilient housing may therefore entail contribution to a collective good; increased climate resilience.

Related to research question 4, we will investigate both the short-run impact of offering the incentives (known in the so-called Randomized Controlled Trial (RCT) literature as the intention to treat effect) and the impact of investing in storm resilient housing (known as the treatment effect on the treated) on measures of resilience and household wellbeing. The outcomes of interest and expected chain of impact are illustrated in the figure below. Note that resilience is not only related to the physical resilience of the house, which the incentive packages are expected to impact directly,

but also on overall responsiveness, resourcefulness, learning capacity and flexibility (ISET, 2012).

Figure 2.1 Expected chain of impact from incentives for investment in storm resilient housing



3. Plan for implementation and evaluation

This chapter describes the plan for implementation of incentives (packages 1 and 2 above) and evaluation of impacts. The strategy for evaluating the incentives is closely linked to its implementation. Specifically, the way the incentives are implemented determines how and whether we are able to identify the impact of both offering and accepting the incentive packages described in the previous chapter.

3.1 Implementation and selection of eligible households

Incentive packages 1 and 2 will be offered to 204 households, with 102 households in each group, each group covering 17 wards and communes. The selection of the households in each group will happen through several steps. The eligible population consists of near-poor households (defined according to City poverty lines, and listed in an official registry at the ward/commune level, see footnote 1 above) throughout Da Nang City in central Vietnam, who are targeted by the Women's Union. Their targeting criteria are the following:

- Housing conditions vulnerable to climate risks.

- Limited access to financial resources for strengthening climate resilience housing.

- Have a stable job but low income.

- Have a demand to strengthening their houses.

- Have a small saving and can mobilize labor force for their housing improvement.

- Have capacity for repayment.

- Have legal or any related documents to prove the land title.

Da Nang City consists of 56 wards and communes (communes are similar to wards, but in rural areas of Da Nang), in 7 districts. 5 wards are not relevant for the program, because there are few individual houses in these wards. They are Nai Hien Dong Ward (in Son Tra District) and Hoa Lien, Hoa Son, Hoa Ninh, Hoa Bac Commune (in Hoa Vang District). We are therefore left with 51 wards, across 8 districts. In this project, Women's Union will select 6 eligible households in each of the 51 wards and communes, according to the criteria above, giving us a total population of 306 households. We will include all of these households in our sample, but as mentioned, only 104 of these will be offered one of the two incentive packages 1 and 2, while the remaining 102 households will serve as a control group (not receiving anything from WU/the project).

Random allocation of households into each of the three groups (T1 receiving package 1, T2 receiving package 2 and C, the control group), will ensure that the households in the groups are on average equal before the incentives are offered, and we can identify the impact of the incentives by comparing outcomes in the treatment groups with outcomes in the control group, and expect the difference to be due to the incentives. This approach is known as a Randomized Controlled Trial (RCT), and is extensively used when evaluating development policies and programs, including microcredit schemes, as discussed in the inception report.

The selection of eligible households by the WU at the ward level happens before any incentives or loan program is mentioned or offered to any households, to ensure that

the selection process is similar in all wards, since the eligibility criteria stated above are not easily verified. The WU provides the same instructions to ward leaders of the WU in all wards and communes to make sure that no promise of future program participation or loans is given as part of the selection. The instructions are shown in **Box 3.1** As emphasized by the WU, it is also in their interest to avoid creating any expectations at the household level, and even at the ward level, since this will make their future collaboration with these households and wards more difficult.

Box 3.1 Information to ward leaders/WU at ward level on the selection of eligible households

The Women's Union of Da Nang is carrying out a survey to investigate the need for storm resilient housing in Da Nang City. The project is carried out with funding from the Nordic Development Fund, and will support the Da Nang City's Resilience Strategy. In this first round, the Women's Union is carrying out a mapping of the need for housing retrofitting and reconstructions for households with houses that are vulnerable to storms. The six households will be visited for a more detailed survey at a later point, tentatively in December 2016.

At this point, the Women's Union would like to identify households categorized as **near poor, with a need for house retrofitting or reconstruction to ensure storm resilience, and with the wish to carry out such retrofitting or reconstruction starting from March 2017.** We are therefore asking each ward to provide a list of six households that fit these criteria. If there are more than six households in the ward that fit the criteria, we would also like a specification of how the six households were nominated among the larger group of households.

We expect a few households to upgrade their houses to become more storm resilient even without any incentives, and since we are interested in capturing the additional impact of the incentives, we do not want to influence the expectations of the households when they are selected to take part in the baseline survey. As further explained below, the baseline survey will be administered to all households, also the households who will not be offered any incentives, but who will be part of the control groups. If households that are selected for the control group expect to get a loan for retrofitting or reconstruction later, they might delay activities that would normally have taken place during our project, which would over-estimate the impact of the incentives we are testing on investment in resilient housing. Another feature of the program that should help us reduce this problem, is that the next part of the program targets poor households, and not the near-poor, so that none of the ward leaders or WU representatives can promise households that are in the control group in this round, program participation in the next round.

3.1.1 Selection of households that are offered incentives

The wards and communes will, as previously mentioned, be randomly selected into three groups, each consisting of 17 wards and communes (known as clusters in the RCT literature), and 102 households:

T1: Treatment group offered the first incentive package

T2: Treatment group offered the second incentive package

C: Control group, not offered any package

The randomization will be stratified by district, to ensure an approximately equal distribution of treatment and control wards across the 8 districts of Da Nang. We have chosen randomization at the ward level rather than the household level to avoid spillover effects to the control group from for instance the information component of the incentive packages. It also very impractical to implement the incentives at the individual level, since the incentives include participation in a savings group as part of the microcredit component, and also information events at the ward level. As explained below, the randomization will take place after the baseline survey has been completed, to avoid any communication of the results of the randomization to the households at the time of the baseline survey. This is to avoid influencing the answers of the households to the questions in the baseline survey, for instance, households may have an incentive to exaggerate the vulnerability of their house if they think this may increase their chances of receiving support through the project.

3.1.2 Statistical power

The statistical power of our empirical approach, that is, the ability to detect impacts of the incentives on the outcomes we are interested in, depends on a number of factors. The statistical power increases with the sample size, both the number of households within each ward or commune, and the total number of wards and communes included. If the measured outcomes vary a lot between the households, this makes is more difficult to detect changes that are due to the incentives. It is also more difficult to detect impacts if the outcomes within each ward or commune are highly correlated.

One concern is that we may have too few clusters (51 clusters with two treatment groups) to detect a potentially small difference in uptake between those offered the two different packages. We also have a small number of observations within each cluster (6 households). Increasing the number of clusters is more efficient than increasing the number of observations within each cluster in terms of increasing power, however this is not an option in our case, since we are constrained by the number of wards and communes in Da Nang.

3.2 Surveys and monitoring

As shown in the timeline in Table 3.1, there will be two surveys related to the testing of the two incentive packages,[5] a baseline survey before the incentives are implemented, and a follow-up survey after the implementation is completed. The purpose of the baseline survey is three-fold: First, to check that the groups offered the incentives can be compared to the control group, i.e. that the groups are on average equal in terms of household characteristics prior to receiving the incentives. This is important in order to check that the randomization was carried out as intended, and that we can attribute any differences in outcomes in follow-up survey to the incentives that were

[5] The incentives for the group of poor households that will be targeted in the next part of the project will be monitored and evaluated using qualitative methods.

implemented. The other purpose is to give us information about the households before the incentives are implemented, since we expect that the impacts of the incentives may vary across households with different characteristics. For instance, the impact may be different for households that are credit constrained before receiving the incentives, than for households that are less credit constrained. Finally, collecting baseline data also allows us to do what is known as differences-in-differences analysis. This means comparing the change in outcomes over time for the households receiving incentives, to the change in outcomes over time for households that do not receive incentives. This is particularly useful if we find that the randomization for some reason did not go as planned.

Table 3.1 Timeline of implementation, evaluation and monitoring activities

Activity	2016	2017				2018
	Dec	Jan	Feb	Mar	Apr-Dec	Spring
Designing questionnaire	X					
Information to ward leaders about hh selection	X					
Pre-testing questionnaire	X					
List of 306 households from ward leaders	X					
Baseline survey	X	X				
Randomization into three groups		X				
Offer incentive packages to households		X				
Vietnamese New Year		*x*	*x*			
List of households accepting incentives from ward leaders			X			
Assessment of selected households for package 1 and 2				X		
Construction start				X		
Monitoring of construction activities				X	X	
Follow-up survey						X

The baseline survey takes place once the eligible households have been selected, but before the randomization takes place. We inform the households that their answers in the baseline survey will not influence whether or not they are offered a loan or other assistance. The follow-up survey will take place as late as possible following the implementation of the incentives, ideally in the spring of 2018, about a year after the incentives have been implemented. The purpose of the follow-up survey is to capture

any changes in outcomes of interest, due to the incentives. The follow-up survey will be based on the same questionnaire as the baseline survey, but a few questions may be added if we see during the implementation period that there are potential impacts that we did not think of when designing the baseline survey. The outcomes of interest are discussed below.

In addition to the household surveys, the WU will monitor the households that accept the incentive packages, and that therefore participate in the microcredit program. WU will also monitor the house construction/retrofitting activities. The houses built or renovated in this project will be in accordance with the design standards for storm resistance at wind level 12 or below in Beaufort Wind-scale. WU staff, partnered with ISET and HCE, will regularly check the construction process to see whether the construction follows the design and key storm-resilient principles are conformed by builders. WU staff will visit the households three times for monitoring the house construction/retrofitting, including: (1) after the house is demolished for new construction/retrofitting, (2) after the completion of foundation, and (3) after the house is completes. In addition, team members from HCE, ISET and Vista will also inspect progress in selected wards during the implementation.

3.2.1 Instruments

The data collection will take place through a paper questionnaire administered to (ideally) the household head of each of the 306 households as well as photos of their houses (to document the features of the house that are important for the storm resilience) and collection of GPS coordinates, in order to couple the household data with available geographic data on for instance exposure to storms and floods. The baseline questionnaire is developed by Vista, HCE and ISET in collaboration, and has been pre-tested in the first week of December 2016. The pre-test was done in two places: Da Nang and Hue. In Da Nang, WU staff helped to do it with 2 households selected and in Hue, Mr Tuan Anh did with 2 households also. The results captured from both places are quite similar such as the questionnaire was understandable to normal persons overall. However, some questions related to feelings, emotional perceptions were suggested by households to re-word in the way that can be quickly understood by normal persons. In addition, some rating ranges are suggested to reduce the range (for example from 0-10 to 0-7). The finalized questionnaire is attached in Annex 1. We aim to repeat this questionnaire in the follow-up survey, but may of course add some questions if necessary.

3.2.2 Data collection

The pre-testing shows that the questionnaire takes about 30 minutes per household. We expect the entire data collection to take about two weeks. Data from the paper questionnaires will be entered into an excel template at the end of each day of data collection. The data processing and analysis will be carried out by Vista and HCE.

Figure 3.1 Pre-testing the household questionnaire on Dec 7 2016

3.2.3 Attrition (drop-out) from the sample

There may of course be attrition from the sample, if for instance households move, or refuse to take part in the follow-up survey. This may be of particular concern in the control group. However, the WU at the city and ward/commune level have a good relationship with their members, and interact with them through other activities, which is an incentive for the households to participate in the follow-up survey. Also, the respondents will also be offered a small monetary incentive to participate in the survey, to compensate them for the time spent.

3.3 Empirical analysis

The empirical analysis consists of both checking the randomization (balancing checks based on the baseline data) as previously explained, and investigating the differences between the three groups in terms of the outcome variables of interest. This may be done either by comparing the mean values of outcome variables from the follow-up survey between the three groups, by adding controls to improve precision, or by doing a difference-in-differences analysis if we find that the randomization is not satisfactory.

3.3.1 Balancing checks

We will check that the three groups do not differ significantly (on average) prior to introducing the incentives by comparing mean values of various background variables such as household income, asset ownership, size of households etc.

3.3.2 Outcome variables of interest

As explained in Chapter 2, we are interested in two research questions in this part of the project. We will focus on different outcome variables to address each question.

R3: What incentives are needed in order to enable (poor and) near poor households to invest in storm resilient housing?

To answer this question, we investigate

- The difference in take-up rate between the two treatment groups
- The impact of being offered each incentive on the decision to retrofit or reconstruct, by comparing the share of households doing retrofits and reconstruction, respectively, in each of the treatment groups compared to the control group

R4: What are the short-run impacts of investing in storm resilient housing?

Here we are interested in the impacts on both resilience, broadly defined, and overall household welfare, measured through various indicators and indexes.

Relevant outcome variables in terms of resilience are:

- Index of subjective resilience (Module I of questionnaire)
- Index of housing resilience (based on photos)
- Indicators of overall resilience:

1) Social capital
2) Income: has the housing improvement come at the expense of income generating activities?
3) Physical capital, in particular
   i) Savings: We expect a change based on the compulsory participation in the savings groups
   ii) Asset ownership: We do not expect to see a change here in the short run, unless households have had to sell assets to pay for housing improvements
4) Human capital: Based on expenditures on education and health, but also on schooling. Want to investigate whether children have dropped out in order to pay for housing improvements. This is also probably more important in the longer run, and especially after experiencing a typhoon, when hopefully less children will drop out among households that have received incentives

Relevant outcome variables in terms of overall welfare are:

- Index of subjective well-being (Module H of questionnaire)
- Expenditure (as an indicator for consumption, where we assume that household utility is increasing in consumption)
- Housing quality

3.3.3 Heterogeneous effects

Heterogeneous impacts of the incentives will be assessed by interacting the treatment variable (the variables indicating whether the household has been offered one of the two incentive packages) with indicators of access to credit, previous exposure to typhoons and other variables collected in the baseline survey, that are directly linked to the expected benefits of investing in storm resilient housing, based on a theoretical framework of technology adoption. Relevant variables here are:

- Indicator of credit market access

- Measure of previous exposure to typhoons, previous damage etc., both based on reporting in questionnaire and geographic data matched with hh GPS
- Current housing resilience
- Beliefs about future exposure

3.4 Conclusion

The plan for implementation and evaluation allows us to investigate both the level of incentives necessary to enable households to invest in storm resilient housing, and the short-term impacts of these incentives on housing resilience, overall resilience and various measures of household welfare. The strategy for implementing the incentives, with randomization across wards, and collection of data from a control group as well as targeted groups, gives us a unique opportunity to understand the causal impact of the incentives offered on the households. This knowledge is necessary in order to understand the potential for scaling up the incentives, as well as the potential for improving the resilience of urban near-poor households in Vietnam. The implementation in this phase of the project also enables robust investigations into the longer run impacts of the incentives on the resilience of households. This is potentially even more interesting than the short run impacts, since the returns to investing in climate resilient housing are mainly realized in the event of a storm.

ANNEX 1: Questionnaire for baseline survey[6]

[6] Almost final draft questionnaire in English. Final version for field implementation is subject to some minor additions/edits before translation to Vietnamese.

HOUSEHOLD IDENTIFICATION	NAME	CODE
Household head		
Name of quarter/village		
Ward/Commune		
District		
Name of respondent		**Sex** 1= Male 2=Female
Name of Enumerator		
Name of data entry person		
Date of interview	**Date:……/……/2016** **Start time:……..:……..** **Finish time:……:……..**	**Checked by:** **……..** **Approved:** **…….....**
Reasons for not conducting interview:		**Household location GPS Coordinates:** **N……** **E……**

INTRODUCTION TO THE HOUSEHOLD TO BE INTERVIEWED

The Women's Union of Da Nang is carrying out a survey to investigate the need for housing that can withstand storms and floods in Da Nang City. The survey is supported by the Nordic Development Fund, and will provide information for Da Nang City's Resilience Strategy.

The Women's Union would like to collect information about your house and ask you some questions about your household. What you answer will not influence whether or not your household will be offered a loan for improving your house later.

Module 1 Household background characteristics

A. Household members: Please list the members of your household.

Member ID	**Name of household member** *Make a complete list of all individuals who normally live and eat their meals together in this household, and have stayed in the house more than 3 months during the past 12 months, starting with the head of the household** **A1**	**Sex** *1=Male 2=Female* **A2**	**Age** **A3**	**Relationship with HH head** *1=Head 2= Husband 3= Wife 4= Son 4=Daughter 5=Grandchild 6=Brother 7=Sister 8=Niece 9= Nephew 10=Other relatives (specify)* **A4**	**Marital status** *1=Married 2=Widowed 3=Divorced 4= Separated 5=Never married* **A5**	**Education**				**Main occupation** *0=none 1= agriculture, aquaculture or fishing 2=salaried work 3=non-farming self employed business 4=pension 5=schooling 6=unemployed 7=other (specify)* **A10**
						Is [NAME] currently in school? (School year 2016-17) *1=Yes 2=No If No, move to A8* **A6**	What grade is [NAME] attending? *1-12= Primary (1-12 yrs) 13= 1 year university 14=2 yrs uni 15=3 yrs uni 16= 4 yrs or more uni 18= 1 year college 19= 2 years or more college* **A7**	Did [NAME] attend school last school year? *1=Yes 2=No* **A8**	What is the highest grade completed by [NAME]? *1-12: Primary (1-12 yrs) 13-17: University (1-4 yrs) 18-20: College (1-2 yrs)* **A9**	
01										
02										
03										
04										
05										

06										
07										
08										

**Make sure that the household head listed here is the same as on the front page of the survey.*

Module 2 Household socioeconomic condition

B. Income: What are the sources and approximate amounts of income of your household for last month (November) and the whole year (2016)?

Activity nr	**Activity**	**Approximate income for the month of November** *(1000 VND)* **B1**	**Approximate income in 2016** *(1000 VND)* **B2**
01	Cropping		
02	Livestock raising		
03	Aquaculture		
04	Fishing		
05	Non-farming self-employment business		
06	Waged labour		
07	Pension		
08	Remittance from family members or relatives (not loans)		
09	Other (specify) (do not add any loans here, they will be asked about later):		
	Total - please add up and check with respondent if total seems roughly ok		

C. Household Assets: What assets does the household own?

Asset nr	Item	Number of items owned C1	What year did you buy the item? C2	Approximately how much did you pay for the item? *(1000 VND)* C3
01	Motorbike			
02	Refrigerator			
03	Washing machine			
04	Air conditioner			
05	Telephone			
06	Mobile phone			
07	Television			
08	Computer			
09	Gas Stove			
10	Livestock			
11	Farm equipment			
12	Boat			

13	Equipment for non-farming self-employment business			
14	Others (specify):			

D. Expenditure in the household: In the month of November, how much, if anything, did you or anyone in your household spend on the following?

Item nr	Item category	Amount spent (0 if nothing) in November 2016 *(1000 VND)* D1
01	Food and drinks to eat at home	
02	Food, snacks or drinks outside the home	
03	Firewood, charcoal, paraffin, cooking gas or similar	
04	Electricity, water, phone, internet	
05	Tobacco, newspaper, magazines, lottery tickets, public transport	
06	Cosmetics, clothing, footwear	
07	Medicines and health services	
08	Education (uniforms, school fees, books, meals, school transportation etc)	
09	Household items	
10	Repairs and maintenance of household items or durables (incl. motorbike, bicycle etc) *House repairs will be asked about later – do not add to this category*	
11	Religious or ceremonial costs (donations, funeral or wedding costs)	
12	Taxes for income, property etc.	

13	Household durables (tv, computer, refrigerator, kitchen equipment, furniture), car, motorbike, bicycle	
14	Livestock or agricultural inputs, equipment	
15	Input for business activities (non-farming self employment business)	
16	Savings	
17	Others, please specify *(do not add loan repayments here, they will be asked about later. Repairs or building equipment for the house will also be asked about later)*	

E. Debt and access to credit

E1 Does anyone in the household currently have a loan? *1=Yes, 2=No* **IF 2 PROCEED TO E7**

Loan nr	How much did you borrow? *(1000 VND)* **E2**	How much do you have left to repay? *(1000 VND)* **E3**	What is the purpose of the loan *1=House construction/retrofitting/repairs 2=Purchasing land 3=Business activities 4=Education expenses 5=Health expenses 6=Consumption expenses 7=Other, specify* **E4**	Who did you borrow from *1=Commercial bank 2=VBSP 3=Microcredit provider 4=Friends or family 5=Black market 6=Other, specify* **E5**	Could you borrow more from this source if you wanted to? *1=Yes, 2=No, 3=Don't know* **IF 2 OR 3 PROCEED TO E7** **E6**
01					
02					
03					
04					
05					
06					

E7 Why do you not have a loan?

1=No need, 2=No access because of bad debt history, 3= No access because of lack of collateral (e.g. no legal land tenure, red book etc.), 4= No access because not a prioritized household for accessing loans from e.g. VBSP, 5=Access, but repayment conditions or interest rate do not fit 6=Other, specify

IF 1 (no need for loan), PROCEED TO F1

Purpose nr	**If you could get a (another) loan, what purposes would you like to borrow money for?** *1=House construction/retrofitting/repairs 2=Purchasing land 3=Business activities 4=Education expenses 5=Health expenses 6=Consumption expenses 7=Other, specify* **E8**	**How much would you like to borrow for this purpose?** *(1000 VND)* **E9**	How much do you think your household would be able to pay per month on a loan? (Interest and repayment/principal) *(1000 VND)* **E10**
01			
02			
03			
04			
05			
06			
07			

Module 3 Housing quality and resilience components

F. Housing ownership and quality

What is the ownership status of your house? *1=owned by this household, 2=rented, 3=borrowed for free, 4=employer provided, 5=other, specify* **F1**	**How many years have you lived in this house?** **F2**	**Do you have any documentation of ownership of the property?** *1= red book, 2= receipts of land tax payment, 3= signed lease, 4=land sale agreement, 5= other, specify, 6= no documentation at all* **F3**	**In which year was the house built?** **F4**	**How many habitable rooms are there in the house?** *Do not count bathrooms, toilets, storerooms or garage* **F5**

Do you feel that you have enough room for all household members to live in the house at the same time? *1=yes* *2= no* *3=don´t know* **F6**	**The walls of the house are predominately made of what materials?** *1=wood, 2=bricks, 3=cement block, 4=concrete, 5=other, specify* **F7**	**The roof of the house is predominately made of what materials?** *1=metal sheets, 2=concrete, 3=clay tile, 4=fibrocement, 5=other, specify* **F8**	**Does the household have piped water?** *1=yes, inside the house* *2= yes, outside the house* *3=no* *CAN GIVE MORE THAN ONE ANSWER* **F9**	**What is the main toilet facility in the house?** *1=outside latrine,* *2=pour flush toilet,* *3=flush toilet,* *4=other, specify* **F10**

G. Housing repairs and maintenance

In 2016, how much time was spent on repairs and maintenance of your house		**In 2016, how much money was spent on repairs and maintenance of your house?** *(1000 VND)* **G3**	**What were the sources of the money spent?** *CAN GIVE MORE THAN ONE ANSWER* *(1=own cash, 2=savings, 3=loan from friends, family, 4=loan from VBSP or other bank, 5=loan from black market, 6=others, specify)* **G4**	**In 2016, did you do any major improvements to your house?** *1=yes, 2=no* **G5**	**What type of improvement did you do?** *1=new plumbing, kitchen or sanitary facilities, 2=new electrical system, 3=adding room(s), additional floor or other new parts to the house, 4=new roof, 5=others, specify* **G6**
by you or any household members *(days of work, where one day is 8 hours)* **G1**	**by friends, family, relatives, neighbors etc.** *(days of work, where one day is 8 hours)* **G2**				

H. Previous storm damage

Have you experienced any damage to your house due to previous storms? *CAN GIVE MORE THAN ONE ANSWER FOR EACH STORM MENTIONED* *1= complete collapse, 2=roof, 3=roof structure, 4=walls/structure, 5=doors and window, 6= others, specify, 7=no* **H1**		**Did you experience any damage to belongings, livestock or crops due to previous storms?** *CAN GIVE MORE THAN ONE ANSWER* *1=damage to belongings, 2=loss of livestock, 3=damage of crops, 4=others, specify, 5=no* **H2**	***IF YES TO H1 AND/OR H2*** **Could you estimate the cost of the damage you experienced at that time?** *(1000 VND)* **H3**	**Has anyone in your household experienced death, illness or injury related to previous storms?** *1= death, 2= illness, 3=injury, 4=others, specify, 5=no* **H4**
Rai (2016)				
Nari (2013)				
Ketsana (2009)				
Xansane (2006)				

Others: (year)				

I. Housing resilience

The investigator has to look at the house carefully for taking photo and completing the CHECKLIST below.

CHECKLIST of resilience components

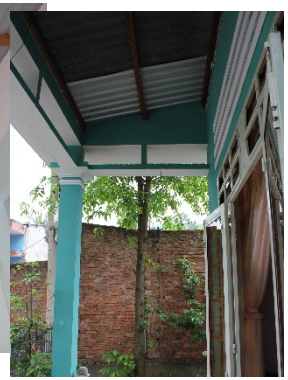
No	*Resilience Component*	*Yes*	*No*	*Note (if any)*
1	*A solid room - the room built by reinforced-concrete (RC) frame and slab*	☐	☐	
2	*Continuous/ring RC beam at the foundation level (asked the house owner whether it was built before, if unable to see)*	☐	☐	
3	*Continuous/ring RC beam at the roof level (asked the house owner whether it was built before, if unable to see)*	☐	☐	
4	*RC pillars inside walls (asked the house owner whether it was built before, if unable to see)*	☐	☐	
5	*RC roof*	☐	☐	
6	*Clay tile roof*	☐	☐	
7	*Corrugated steel sheet roof*	☐	☐	
8	*Roof bracings*	☐	☐	

The photos taken need to view the main resilience components of the house. Each house has at least 3-5 photos, with the views as in the below pictures:

Outside

Inside

Roof



Veranda

Have you ever done any improvements to your home to make it stronger in case of storms (winds and/or flooding)? *CAN GIVE MORE THAN ONE ANSWER* *1=rebuild entire home, 2=add an extra level, 3=elevate the house, 4=reinforce roof,* *5=replace roof, 6=reinforce walls 7=replace walls, 8=replace or install solid posts, beams for support, 9=other, specify, 10=no* **I1**		***IF ANSWER 1-9 IN PREVIOUS QUESTION*** **How much time was spent on doing these improvements?** **by you or any household members** *(days of work, where one day is 8 hours)* **I2**	**by friends, family etc.** *(days of work, where one day is 8 hours)* **I3**	***IF ANSWER 1-9 IN QUESTION I1*** **How much money was spent on doing these improvements?** *(1000 VND)* **I4**	***IF ANSWER 1-9 IN QUESTION I1*** **What were the sources of the money spent?** *CAN GIVE MORE THAN ONE ANSWER* *1=own cash, 2=savings, 3=loan from friends, family, 4=loan from VBSP or other bank, 5=loan from black market, 6=others, specify* **I5**	***IF NO TO I1*** **Why have you not done any such improvements?** *1=no need, already strong enough* *2=no need, not exposed to storms, 3=priority on other housing improvements, 4=no money for housing improvements, 5=other, specify* **I6**
Improvement number **01**						
02						
03						
04						

05					
06					
07					
08					

Module 4 Life satisfaction, social capital and resilience

J. Life satisfaction:

The following question asks how satisfied you feel, on a scale from 1 to 5. *1: not at all satisfied, 2: partly satisfied, 3: satisfied, 4: more than satisfied, 5: very satisfied, 6: don't know* *(don't give them the "don't know" option, only if they really need to use it. Try to get an answer first)* **Overall, how satisfied are you with your life as a whole these days?** *[1-5]* **J1**

The following questions ask how satisfied you feel about specific aspects of your life, on a scale from 1 to 5. 1: not at all satisfied, 2: partly satisfied, 3: satisfied, 4: more than satisfied, 5: very satisfied, 6: don't know (don't give them the "don't know" option, only if they really need to use it. Try to get an answer first)

How satisfied are you with your standard of living? *[1-5]* **J2**	**How satisfied are your with your health?** *[1-5]* **J3**	**How satisfied are you with what you are achieving in life?** *[1-5]* **J4**	**How satisfied are you with your personal relationships?** *[1-5]* **J5**	**How satisfied are you with how safe you feel from being affected by storms and floods?** *[1-5]* **J6**	**How satisfied are you with feeling part of your community?** *[1-5]* **J7**	**How satisfied are you with your future security?** *[1-5]* **J8**	**How satisfied are you with the amount of time you have to do the things that you like doing?** *[1-5]* **J9**	**How satisfied are you with the quality of your local environment?** *[1-5]* **J10**	*For respondents who are employed only:* **How satisfied are you with your job?** *[1-5]* **J11**

K. Social capital

About how many close friends would you say that you have these days? These are people that you feel at ease with, can talk to about private matters, or call on for help **K1**	**If you suddenly needed to borrow a small amount of money, enough to pay for household expenses for one week, are there people beyond your immediate family who would be willing and able to provide this money?** *1 :Definitely 2: Probably 3: Unsure* *4: Probably not 5: Definitely not* **K2**	**In the past 12 months, how many people with personal problems have turned to you for any form of assistance?** **K3**

L. Index of resilience: Please rate the following statements on scale ranging from 1 to 5. *1: Strongly disagree 2: Disagree 3: Neither agree nor disagree 4: Agree 5: Strongly Agree 6: don't know (don't give them the "don't know" option, only if they really need to use it. Try to get an answer first)*

If a storm such as Nari in 2013 occurred in my area tomorrow, my house would be safe. *[1-5]* **L1**	**If a storm such as Nari in 2013 occurred in my area tomorrow, my household would be able to fully recover from the damage caused by the storm within 6 months.** *[1-5]* **L2**	**If the frequency and intensity of storms was to significantly increase in the next 5 years, my household would have the ability to successfully adapt to the changing threats posed by the storms, even if this required us to completely change our way of life.** *[1-5]* **L3**	**If a storm such as Nari in 2013 occurred in my area tomorrow, my household would have access to sufficient financial resources to ensure that we fully recover from the threats posed by the storm.** *[1-5]* **L4**

If a storm such as Nari in 2013 occurred in my area tomorrow, my household would be able to draw on the support of family and friends to ensure that we fully recover from the damages caused by the storm. *[1-5]* **L5**	**If a storm such as Nari in 2013 occurred in my area tomorrow, my household would get sufficient support from the government to recover from the threats posed by the storm.** *[1-5]* **L6**	**My household has learned considerably from how we have dealt with past storm events. This knowledge is crucial in successfully dealing with future storm events.** *[1-5]* **L7**	**If a storm such as Nari in 2013 was to occur in my area tomorrow, my household would have access to early-warning information to ensure that we are fully prepared for the threats posed by the storm.** *[1-5]* **L8**

M. Perception of risk and risk preferences:

Do you think the <u>frequency</u> of the following natural phenomenon has been changing compared to 10 years ago? *1=No change, 2=decreasing, 3=increasing, 4=don't know*			**Do you think the <u>intensity</u> of the following natural phenomenon has been changing compared to 10 years ago?** *1=No change, 2=decreasing, 3=increasing, 4=don't know*		
Flood **M1**	**Storm** **M2**	**Drought** **M3**	**Flood** **M4**	**Storm** **M5**	**Drought** **M6**

How would you rate your willingness to take risks in general? *1= Completely unwilling to take risks 7=Completely willing to take risks*
M7

Signature of Interviewee

ANNEX 2: Updated work-plan

Milestone 1: Inception	Tasks	Person responsible	Other contributors	Due date, 2016				
				Apr	May	Jun	Jul	Aug
Inception workshop, detailed revised work plan and inception report (Vista, co-lead HCE)	Preparing for inception workshop	All			9			
	Inception workshop with kick-off meeting	All			9-13			
	Documenting inception workshop and updating project home page (each partner)	Sofie, Phong			20			
	Revision of work plan	Sofie			20			
	Finalize contractual arrangements between partners	Sofie, Haakon				10		
	Clarify administrative procedures with NDF	Sofie, Henrik				3		
	Outline inception report	Haakon			27			
	Overview of existing data sources and relevant statistics - Eligibility criteria for previous selection of households	Tuan Anh Phong	Phong, WU			3		
	Tentative incentive packages for discussion	Henrik, Sofie				6		
	Develop proposal on empirical strategy for testing of incentives	Henrik, Sofie				6		

Milestone 1: Inception	Tasks	Person responsible	Other contributors	Due date, 2016				
				Apr	May	Jun	Jul	Aug
	- Quantitative approach with sampling etc. - Measuring technology take-up - Measuring household level resilience - Qualitative approach with focus groups, case studies etc.							
	Skype meeting on tentative incentive packages and empirical strategy (8 pm Vietnam time)	All				8		
	Description of expected barriers to investment, based on previous research and experiences	Tuan					X	
	Planning focus groups for households to identify relevant barriers to investment in climate resilient housing	Tuan					X	
	Conducting focus groups	Tuan					X	
	Report on consultation with housing sector actors, including banking and insurance, local government, civil society, construction and architect actors	Tuan Anh			20			
	Consultation with Swiss Re on potential testing of parametric typhoon insurance, in collaboration with CCCO and WU (13th 15th July Singapore meeting, Phong)	Phong	CCCO					

Milestone 1: Inception	**Tasks**	**Person responsible**	**Other contributors**	**Due date, 2016**				
				Apr	**May**	**Jun**	**Jul**	**Aug**
	Draft inception report chapters						3	
	Inputs to Financial Report from each partner due - Inputs to Table 1 of Financial Report (costs) - Inputs to Table 2 of Financial Report (sources of funding, co-financing) - Detailed time sheets and description of travel costs, and other costs (according to template in Annex 1 to Financial Report) Copy of any invoices exceeding 2000 Euro	All					31	
	Internal draft inception report due	Haakon					31	
	Progress and Financial Report	Sofie, Haakon						7
	Comments inception report due	All						7
	Request for disbursement	Haakon						
	Due: Inception report, including revised work plan and documentation of inception workshop **Progress and Financial Report** **Request for disbursement**	Haakon, Sofie						15

Milestone 2: Incentive mechanisms design	Tasks	Person responsible	Other contributors	Due date, 2016				
				Aug	Sep	Oct	Nov	Dec
2) Incentive mechanisms designed (Vista, co-lead HCE)	Analysis of results from focus groups, with focus on current hurdles for uptake of climate resilient housing	Tuan			15			
	Skype meeting on work plan for milestone 2, design of incentive packages and plan for workshop		Vista, HCE, ISET		21			
	Proposal on refined incentive packages for discussion among partners	Henrik				6		
	Skype meeting on refined incentive packages		Vista, HCE, ISET			10		
	Plan for implementation of incentives – draft for workshop discussion	Henrik	Phong			x		
	Plan for evaluation in field – draft for workshop discussion	Sofie	Tuan			x		
	Workshop in Vietnam • Finalize incentive packages and plan for	All				24-28		

Milestone 2: Incentive mechanisms design	Tasks	Person responsible	Other contributors	Due date, 2016				
				Aug	Sep	Oct	Nov	Dec
	evaluation in field • With due diligence meeting from NCF + visit to Norwegian Embassy in Hanoi							
	Designing and pre-testing questionnaire	HCE	Vista, ISET				27	
	Informing wards and nominating 306 households (6 in each of 51 wards)	WU						15
	Inputs to Financial Report from each partner due - Inputs to Table 1 of Financial Report (costs) - Inputs to Table 2 of Financial Report (sources of funding, co-financing) - Detailed time sheets and description of travel costs, and other costs (according to template in Annex 1 to Financial Report) - Copy of any invoices exceeding 2000 Euro							9
	Internal draft incentive mechanisms report							7
	Comments incentive mechanisms report due							12
	Progress and Financial Report							15
	Disbursement request							15
	Due: Report on incentive mechanisms, including plan for evaluation in field and plan for use of							15

Milestone 2: Incentive mechanisms design	Tasks	Person responsible	Other contributors	Due date, 2016				
				Aug	Sep	Oct	Nov	Dec
	incentives first 30 houses **Progress report and financial report** **Request for disbursement**							

Milestone 3: First 70 houses	Tasks	Person responsible	Other contributors	Due date, 2017									
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
3) 70 houses built or retrofitted, monitoring report. Plan for use of incentives final 30 houses (WU, co-lead ISET)	Practical preparation of incentive packages	WU	ISET	x	x	x							
	Baseline survey	HCE	Vista, ISET	x	8								
	Randomization of households into treatment and control groups	Vista			15								
	Offering packages to households in treatment groups	WU	ISET										
	Local WU reports list of accepted households	WU	ISET			26							
	Assessment of selected households/distribution of incentives	WU	ISET				5						
	Construction start						12						
	Monitoring implementation					x	x	x	x	x			

Milestone 3: First 70 houses	Tasks	Person responsible	Other contributors	Due date, 2017									
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	Workshop in Vietnam to assess progress, implementation experiences and data collection Tentative dates:						x						
	Proposal for detailed contents of incentive package for poor households	ISET	WU, Vista, HCE										
	Workshop in Vietnam to discuss experiences and plan implementation for final 30 houses. Tentative dates:											x	
	Draft monitoring report, including plan for final 30 houses due											x	
	Inputs to Financial Report from each partner due												1

Milestone 3: First 70 houses	Tasks	Person responsible	Other contributors	Due date, 2017									
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	- Inputs to Table 1 of Financial Report (costs) - Inputs to Table 2 of Financial Report (sources of funding, co-financing) - Detailed time sheets and description of travel costs, and other costs (according to template in Annex 1 to Financial Report) - Copy of any invoices exceeding 2000 Euro												
	Internal draft monitoring report due, including plan for final 30 houses											x	
	Comments monitoring report												1
	Progress and Financial Report												15
	Disbursement request												15

Milestone 3: First 70 houses	Tasks	Person responsible	Other contributors	Due date, 2017									
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	Due: Monitoring report and plan for use of incentives final 30 houses **Progress report and financial report** **Request for disbursement**												15

Milestones 4 and 5: Last 30 houses and workshop	Tasks	Person responsible	Other contributors	Due date, 2018							
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
5) Final 30 houses built or retrofitted, monitoring report. (WU, co-lead ISET) **6) Workshop to discuss preliminary results (HCE, co-lead Vista and ISET)**	Practical preparation of incentive packages			x							
	Distribution of incentives				x						
	Monitoring and data collection				x	x	x	x	x	x	
	Tentative date for follow-up survey for Incentive Packages 1 and 2										*x*
	• Implementation review workshop • Workshop to discuss preliminary results Tentative dates:										
	Draft monitoring report due									15	
	Inputs to Financial Report from each partner due - Inputs to Table 1 of Financial Report (costs) - Inputs to Table 2 of Financial Report (sources of funding, co-financing)									31	

Milestones 4 and 5: Last 30 houses and workshop	Tasks	Person responsible	Other contributors	Due date, 2018							
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
	- Detailed time sheets and description of travel costs, and other costs (according to template in Annex 1 to Financial Report) - Copy of any invoices exceeding 2000 Euro										
	Internal draft monitoring report due									31	
	Comments monitoring report										6
	Progress and Financial Report										15
	Disbursement request										15
	Due: Monitoring report and plan for use of incentives next 40 houses **Progress report and financial report** **Request for disbursement**										15

Milestones 6 and 7: Refining analysis and producing report	Tasks	Person responsible	Other contributors	Due date, 2018					
				Apr	May	Jun	Jul	Aug	Sep
7) Refine analysis and results, produce report (Vista, co-lead ISET) **8) Project reporting**	Data analysis and reporting on impacts of incentive packages								
	Prepare communications materials for public and private actors								
	Preparing national presentations								
	Dissemination workshop Tentative dates:					x			
	Preparing scientific publications								
	Preparing final project report								
	Draft final project report								
	Inputs to Financial Report from each partner due - Inputs to Table 1 of Financial Report (costs) - Inputs to Table 2 of Financial Report (sources of funding, co-financing) - Detailed time sheets and description of travel costs, and other costs (according to template in Annex 1 to Financial Report) - Copy of any invoices exceeding 2000 Euro								
	Internal draft monitoring report due								

Milestones 6 and 7: Refining analysis and producing report	Tasks	Person responsible	Other contributors	Due date, 2018					
				Apr	May	Jun	Jul	Aug	Sep
	Comments monitoring report								
	Progress and Financial Report								
	Disbursement request								
	Due: Monitoring report and plan for use of incentives next 40 houses **Progress report and financial report** **Request for disbursement**								15

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Vista Analyse AS

Vista Analyse AS er et samfunnsfaglig analyseselskap med hovedvekt på økonomisk forskning, utredning, evaluering og rådgivning. Vi utfører oppdrag med høy faglig kvalitet, uavhengighet og integritet. Våre sentrale temaområder omfatter klima, energi, samferdsel, næringsutvikling, byutvikling og velferd.

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