Key Madagascar Baseline Results and HIH Programming Implications[[1]](#footnote-0)

General

The survey was a census undertaken in all 30 HIH program villages. There was *good representation of households from all three areas* surrounding (within 2 km of) the HIH targeted Monombo forests (Monombo Special Reservie Parcelles I and II and the Classified Forest). The proportion of households classified as falling within the Parcelle I catchment area was somewhat higher than for the other two areas but this reflects the large population size of a number of villages surrounding Monombo Forest along the highway.

Demographics

The total number of people listed as resident of the 1321 interviewed households was 7598. *This is the target population size for HIH’s programs in these 30 villages*.

*The response rate was very high meaning the results reflect what is happening on the ground:*

- 99.3% for the household interview

-95% for eligible individual females within the household (aged 15-49)

-98.4% for mothers/caregivers of children < age 5 within the household

97% of household respondents were either the HH head or their partner, *those most knowledgeable about the household conditions.*

Of the women interviewed, 15.7% were listed as #1 on the household list (= head of household). *It could be useful to analyze in more detail where these are located, any special characteristics of such households and if there are any significant differences in results between female and male headed households especially for opinion, income, good security and/or forest use questions.*

While household member size was over 10 for approximately 3% of households, the average household size was around 6. This is the same as calculated in the most recent MICS survey, *suggesting quality data collection for this variable.*

Les than 1% of households had more than 2 women eligible to be interviewed. Most HHs had only 1 eligible women and in 10% of households, there were no eligible women. *Results on women’s birth and contraceptive use thus represent the experiences and needs of HIH target program areas.*

In only 1% of household were there more than 2 resident children under age 5. And, a quarter of households had no children < age 5. *Knowing which households have young children now, and in the future, is an important point for HIH programming in terms of targeted health interventions*.

A little over 50% of interviewed women had no schooling. Close to 40% only finished primary school. For interviewed heads of households, the majority had primary level education. *This confirms that IEC program efforts should likely focus on non-written means of communication*.

Occupation

The primary type of work reported by all household members over age 5 was farming. The second highest primary work was production of things in the house (e.g., baskets). Less than 5% of respondents reported producing charcoal as their primary or secondary activity. *The proportion reporting this was highest among those in the Classified Forest.*

House characteristics

In terms of housing characteristics, almost all households had floors, walls and roofs made of natural materials (e.g., palm fronds, bamboo, wood). *This well reflects local community dependence on what they can harvest locally for free to meet basic housing needs. Where these materials can only or mainly be obtained inside reserve areas, without alternative sources, communities have no choice but to harvest within reserve areas.*

Almost all households cooked using traditional methods, mainly open fires, and wood was overwhelmingly the main energy source for cooking. Very few

said they used charcoal for cooking. *Given that charcoal sales are evident along roads in the target area, this finding and the small proportion that said they produce charcoal as an income generation suggests that road charcoal sales may involve people from other communities. This is something that warrants further qualitative investigation to assess the extent to which local communities are involved in this practice.*

Wealth

INSTAT uses standard formula (based on a subset of tool questions) for calculating a economic well-being (wealth) index that is then divided into quintiles, from lowest to highest. This index is relative economic-well being, that is, it reflects the experiences/situation of just those interviewed. It does not measure absolute poverty or non-poverty and also cannot be compared to any other group of people. Not unsurprisingly, only for women ranked in the highest quintile were levels for secondary level education and above over 10%.

Ownership

Considering the various household items listed on the survey tool, part of the standard formula used by INSTAT to determine relative household wealth, very few members of surveyed households claimed to own list items except a portable phone (17.5%) and fishing net (14%). *Depending on how widely distributed households are with portable phones, HIH could share key phone/text messages to these households as message “nodes” and ask them to then distribute these messages to other households in their local vicinity.*

At the household level, 28% had a radio that highlights how radio communications could also be used to communicate key messages. *Other programs have used “radio listening groups” to take advantage of the availability of radios within communities, facilitated by a trained group leader who points out key messages and encourages discussion of these messages among group members for increased learning.*

Almost no households had a fixed telephone, computer or internet access, *highlighting that these means of communication are not appropriate for this area.*

An indicator considered particularly sensitive to change in income in other HIH countries (e.g., Borneo), corresponding to HIH interventions, is whether household children own shoes. The INSTAT survey tool asked if any member of the household owned shoes and 40% of households responded that no member owned shoes. *As an item that both reduces health risks (especially from worms) and is indicative of availability of purchasing income, HIH should consider how to target use of shoes as one of its community health messages.*

Land/Agriculture

A high proportion (close to 90%) of households indicated that they owned   
some land. And, around ¾ of those who owned land said that their land was titled. *This is an important finding as agricultural interventions e.g., to increase crop yield, are more likely to be taken up in earnest, assuming inputs are available, when the land is owned and people see the intervention as a personal investment.*

Importantly, the amount of land owned by target households was relatively small - 60% owning land said the amount was1 ha or less. And, 94% owned 4 ha or less. Also of note, about ¼ of landowners said they used all /100% of their land last year for agriculture and a little over ¼ said they used only 50% of their land for agriculture last year. *Reasons for non-use were not explored in the survey but these land sizes shouldto be taken into consideration when developing agricultural interventions to increase food security, traditional medicines, household materials and/or cash crops for income generation.*

Among the subset of households that owned land and were using at least some of the land for agriculture (1134 out of 1321 households), the main activity (93%) was irrigated (paddy) rice cultivation. A much smaller proportion (22%) grew rain fed rice, only or in addition to irrigated rice. This proportion was higher in communities around the Classical Forest. Almost all households engaged in cultivating irrigated/paddy rice used traditional methods and grew a traditional rice variety. Similarly, almost all engaged in rain fed rice cultivation grew traditional rice varieties. The rice production cycle was 6 months for 88% of those growing irrigated/paddy rice; for those cultivating rain-fed rice, most said the cycle was 4 or 5 months. *During radical listening, interest was expressed in having three crops/year, a cycle of every 4 months*. *It would be useful to review which of the surveyed households reported a cycle of close to 4 months to determine if there is anything different/special about these households, or members within, that could be considered as strategies for reducing crop cycle length for others.*

A useful finding from the survey is that 67% of households reported non-use of tavy during the previous 12 months, a traditional slash and burn farming practice used historically to clear land, mainly for rice cultivation. Tavy was practiced more in communities around the Classical Forest. *Tavy has long been illegal in Madagascar but remains culturally strong in some areas. Identifying where special effort in target communities is needed by HIH to provide alternatives to tavy will help reduce this threat to remaining local rainforests.*

In terms of crops other than rice, 97% of the 1134 households with agricultural land grew manioc last year; 58% grew sweet potatoes; 67% grew cash crops and 43% some other type of crop. *These values indicate that a fair proportion of households with agricultural land are growing other crops, in addition to rice, for their own use and for income. This is useful information when considering the kind of agricultural interventions that HIH might support to address food insecurity and income to offset healthcare costs (including access) as well as to reduce incursion into remaining natural areas for crop planting.*

In terms of livestock, almost no households owned cows, goats or sheep. The animal owned by the most households (40%) was pigs and about ¼ of surveyed households owned zebu. The survey did not explore whether livestock was for household consumption or income generation or both but some households reported a need to sell off livestock to meet household need for food during the previous year (see food security findings below). *Interventions that can help keep livestock healthy may be an important complement to agricultural interventions for HIH to consider. Interventions that help limit livestock incursion into protected areas where such use is not allowed would simultaneously contribution to conservation goals.*

Forest use

That more than 40 percent of households (n=535) indicated that at least one member entered or visited a forest often during the previous 12 months *reveals 1) that community members do affect local forest integrity and 2) an opportunity for HIH to support interventions aimed at reducing community practices that are highly detrimental when in the forest. Not surprisingly, use was highest among households in the catchment area of the Classified Forest, as this forest area does not yet fall under the same level of legal protection as the two other Manombo Special Reserve parcelles*.

According to the survey results, a key reasons for entering the forest was just to traverse from one place to another. *If no other negative activity is undertaken while traversing, this would not constitute a major conservation threat.*  The main activity mentioned that could negatively affect forest integrity is cutting down trees (reported as the main reason someone entered the forest for 171/1776 households). Of these 171, approximately half did so to produce charcoal and half to obtain wood for construction. *In order to offset these actions, HIH would need to consider supporting alternative fuel sources, fuel efficient cooking devices, designated localities outside of the forest for planting trees for these uses and/or income-generating options that would enable community members to purchase these resources (assuming they were locally available for purchase).*

Of note, a high proportion of households in which no one entered the forest in the past year (n=353) responded that this was because there was no need or because it was not authorized. *It would be useful to explore more in-depth if anything special characterizes these 353 non-forest visiting households that could inform interventions for the forest-visiting households.* Only around half of the households indicated that they were aware of rules governing entry into local forests; *this highlights* *a basic conservation-related communication message that HIH could support*.

Overall, the large majority of households said there were advantages or benefits of living close to the forest. The main perceived benefits were related to providing water or clean air although some households also mentioned as a source of firewood or construction wood. *There is little room for the first indicator to increase over time but differences in specific reasons for this perception may vary over time, with project interventions including education about the value of local forests for their ecosystem services.*

Notably, more than half of the household did not perceive local forests to be threatened. *This provides another potential intervention topic in terms of HIH conservation education.* Of those who did feel that local forests were threatened (n=528), the main perceived threat was tree cutting. This response is consistent with the main reason for forest entry and *highlights the relative importance of tree cutting as a conservation threat among target households*.

Consistent with HIH’s strategy of increasing access to healthcare as an incentive to communities to reduce/stop negative conservation practices, 84% of households felt that people in their community would stop such practices if offered a discount or reduction associated with seeking healthcare. *While only a sub-set of households reported actually engaging in practices negative to forest conservation, the overwhelmingly positive response to this question suggests that this could also be a useful strategy in Manombo communities to generate social support and new community norms against households engaging in such practices. This could serve as a strong motivator for the sub-set of households that do engage to reduce or stop these practices, assuming the underlying reasons for engaging in such practices are addressed (e.g., alternative source for wood for new households or to repair existing ones).*

Notably, over 90% of households indicated that they had not used anything from the forest to pay for healthcare in the past 12 months. *In this regard, unlike HIH’s Borneo model, it does not appear as if the few community members that do cut trees, or engage in other negative forest conservation practices, are doing so to offset/pay for healthcare costs.* *Offering a healthcare incentive to reduce negative conservation practices would thus likely work through a social contract and/or social pressure mechanism – or by reducing costs that could be applied to obtaining e.g., alternative fuel sources instead of firewood, rather than by directly offsetting healthcare financial costs.*

When responding to the question about whether the forests should be protected, almost every household responded yes. *This highlights strong support for local forests.*  The main reason corresponds with the main reason they indicated that forests provide a benefit to them: as a source of water/rain. Many responded that forests provide shade/keep areas cool (local micro-climate) and others that forests provided land for agriculture. *The latter is an interesting finding warranting more in-depth investigation given that the large majority of people who currently engage in agriculture own their land. Although maybe this is the point; those who don’t currently own land may look to the forests as an area where they could practice agriculture.*

As another important conservation question, if honestly answered, over 90% of households indicated that they don’t (ever) lemurs. *This suggests that threats to these endangered animals from local communities derives more from habitat loss/use than from consumption*.

When responding to the question about whether the forests will be around for future generations, almost every household responded yes. *This further emphasizes the opportunity, and need, for HIH to provide fact-based conservation education to target communities, linked to information about the importance of forest conservation and their role in helping in protect local forests.*

Food security

*Food insecurity was highlighted as a key issue by many, if not most, communities during early HIH needs assessments around Manombo forests. Various metrics and tools exist to document levels or degrees of food security, some involving dozens of questions to address the multiple aspects of/factors contributing to food (in)security e.g., food availability, daily food consumption, food preferences, food storage, etc. Given limitations in the final length for HIH’s baseline tool, a short sub-set of food* *security questions was included based on a literature review of the sensitivity of different questions in identifying truly food insecure households.*

*In addition, as elsewhere in the questionnaire, some questions were included to match questions posed by HIH in their Borneo surveys to allow for future cross-country comparisons.*

*Of note, despite the consistent, qualitative information obtained pre-survey regarding the pervasive issue of food insecurity, the data obtained from the census survey did not fully support this assertion.*

Overall, over 70% responded that, yes, over the past month they had *feared* they would lack food. Close to half of these said they often feared this. However, in terms of how many households were, in fact, without food during the past month, only about 25% said yes and less than 15% of these often experienced lack of food over the prior month. *These two statistics suggest that the fear of food insecurity was greater, at least over the month prior to data collection, than actual experience.*

Similarly, for a similar question about going to bed hungry at night, only about 15% said yes (any level), and around 30% of the 15% (around 5% overall said this happened often). For a third question aimed at determining how absence of food contributed to their sense of or actual food insecurity, < 10% of households responded going a full day and night without any food the month prior to data collection, 6% of whom said this happened often (<1% of total households).

A combined food security metric was subsequently developed including four of the questions that were formatted in the same way (yes/often, yes/sometimes, yes/ rarely, no/never). This index combined all no/never responses for each household as a proxy for being considered *not* food insecure. Only 5% of households were considered food insecure with this combined metric (95% were not). On the opposite side of the spectrum, to identify the most food insecure households, a metric was developed for each household that responded yes/often to all 4 questions. Only 3 such households (< .5%) met this criterion. A third metric was then developed considering all responses scored as 1-4 (1 representing yes/often; 4 representing no/never). Calculating these scores over all households, the average was over 13 (out of 16), a quarter of all households had a score of 16 (all no/never responses) and close to 50% of all households had a score above 14. All these metrics similarly suggest that the households were not severely food insecure, according to their responses to just these four questions.

*However, this does not negate that there is or could be food insecurity in these communities. It could be that, despite reflecting a standardized, set of tested questions, the subset of 4 questions posed as part of the baseline did not pick this up (i.e., were not sensitive enough or the best subset of questions*).

*To the above point, understanding the Malagasy cultural tradition of eating rice and not considering a meal complete without rice, a question was added to HIH’s baseline survey about going a full day and night without rice the previous month.* Importantly, over 40% of households responded yes to this question – that they had, in fact, gone at least one and up to 30 days without eating rice. Of the 586 households that had experienced eating no rice for a full day and night, the most commonly reported number of days was 2. *However, a not insignificant number reported going 20 and even 30 full days without eating rice. This suggests that food preference, in this case for rice, strongly influences local community perception/definition of food insecurity*.

*To further explore how rice affects baseline measures of food insecurity, the tool documented specific months over the previous year for which there was no rice for households to eat with meals.* April was mentioned the most often, followed in frequency by the previous three months of the year (January, February, March). Few households mentioned May to October. For November and December, the frequencies of households mentioning no rice were the same levels as for January-March. The average number of months with no rice with their meals was 2 but a substantial proportion of households reported up to 4 or 5 months. Approximately 25% of households reported no months during the year when they had no rice. *These details are important to consider when interpreting the responses to the initial questions as the survey was administered during the month of* *December, November (the month before) being mentioned by approximately 20% of households as a time when they had no rice with their meals. If the survey had been administered in May, the month past April- the highest month mentioned without rice with meals- responses to other food security questions could very easily be different. This underscores the importance of survey timing both in terms of program implementation but also in terms of potential seasonal variation in important indicators, in addition to the feasibility of conducting the survey (when people are in their villages and weather or other factors allow for data collection).*

*The baseline tool did not measure calorie consumption nor were anthropometrics possible to assess malnutrition. The questions covering lack of any food did not end up being useful for assessing food security in terms of baseline needs or as the basis for assessing change over time in community-stated needs. What is clearly useful relates to the availability and consumption of rice with their meals. It is thus advised not to use the term “food insecurity” when considering community-related needs, program interventions and ways to measure change/success over time but rather to focus on “rice availability” as the main metric and program intervention.*

When rice is not available, community members may eat foods they don’t normally, or even like to, consume to avoid going hungry. Two such foodstuffs known to be consumed in the area were Tavalo and Via. Almost no households reported eating Tavalo and fewer, but approximately three quarters, of all households reported not eating Via. However, approximately 2/3rds of all households said that, in fact, they did eat something other than what they normally consumed in the 30 days prior to the survey. *Their responses were qualitatively noted and should be post-coded to provide additional information to inform the food security results and also possible agriculture-related program interventions*.

To explore food security in terms of having to sell assets to pay for food, close to 25% indicated they had to do this during the previous year. The most commonly sold asset was livestock. *However, many households indicated that they did not own livestock. A few households reported selling household items but many households may not own items that they could sell for food. Meaning, while providing some insights, this indicator could reflect ability to sell as much as need to sell to meet their food requirements, especially rice.*

Another angle to assessing food security considered the relative need for and choice of food versus healthcare. This question applied only to the subset (21%) of households in which someone had been sick during the previous year and didn’t have enough money, however, among this subset, over 70% said they chose healthcare over food. *This highlights how, while not a common experience, paying for healthcare is prioritized when the choice is required. Providing increased access to healthcare in these communities will reduce the need to choose, addressing both food-security and healthcare related needs for those faced with this unfortunate choice.*

Fertility

The total fertility rate (TFR) for women in the target communities (considering data from the 3 year birth history before the survey) was close to that measured in similar surveys (MICS) for the whole region (6.6 versus 6.4 respectively). Of note, the TFR was lowest among women in households representing the highest wealth index quintile – a third lower than for women in the lowest wealth index quintile households. Contraceptive use overall was relatively low (13% for modern methods) and followed the same pattern –being more than twice as high for use of a modern contraceptive method among women in the highest versus lowest wealth quintile households. *Family planning is known to be a cost-effective intervention that not only contributes to reducing maternal and child mortality but also helps many families live more within their means*. While almost 50% of current non-users reported no intention to use a contraceptive method in the future, a large proportion of these women were not at risk of pregnancy (e.g., menopausal, no sexual activity), according to their responses for not using in the future. *Many factors affect contraceptive uptake and HIH should consider supporting interventions that ensure equal access to family planning information, method choice, referral and followup, as needed and desired, for couples in all households, regardless of factors that affect their wealth index status*.

Birth history

The large majority of women (85%) had ever given birth and were able to provide their full birth history upon which infant and child mortality rates were calculated. *This allows for direct comparison of the survey IMR with those provided for different geographic levels in Madagascar by the MICS and* *DHS surveys.*

Of the subset of women who responded to the question regarding where they gave birth, approximately 80% said they delivered at their own home and another 11% said at another person’s house, yielding a home birth rate (among women who responded) of over 90%. *Increasing institutional births or the safety of home birth deliveries, when an institutional delivery is not possible, are strategies HIH can consider to reduce the infant mortality rate in targeted communities*.

Mortality

Using the full birth history data, INSTAT calculated mortality rates at different periods post-birth [neonatal, post-neonatal, infant, child (1-5) and 0-5] for the three most recent 5-year periods before the survey. Of note, all five age group mortality rates were higher for the most recent 5- year period (roughly corresponding to the period 2014-2019) compared to the 5 years prior that, in turn, were lower than the period 10-14 years before the survey. This same phenomenon was noted for the region overall (MICS survey, 2018) although regional values were higher for the past two 5-year periods than for Manombo area communities. Within the 30 target HIH communities, the most recent 5-year mortality rates for all age groups were lowest for Parcelle II and markedly lower, around 50% or more, for children of women in the highest versus lowest wealth quintile households. *This large discrepancy is worth investigating to look at breastfeeding practices and maternal nutrition, post-natal care practices including immunizations, and household sanitation/hygiene, among factors, to identify factors that could be supported as HIH interventions*. *Additionally, the rate for twins was notably higher which could reflect a number of factors worth assessing for the potential for HIH intervention*.

Women were asked the cause of death for any of their children. Overall, per their understanding, the cause mentioned the most frequently over all age groups was malaria, followed by God’s will, then fever. As fever is a major malarial symptom, the two combined constituted approximately 1/3rd of all causes of death reported by the women. *This finding should be compared to any available morbidity/mortality data for the local communities to identify the main disease challenges and tested interventions that HIH could support to reduce disease rates (e.g., bednets, removal of containers around households serving as mosquito breeding areas, ORS and water purification tablets if fevers are associated with diarrhea, etc.*)

Morbidity

That fever is a commonly experienced symptom was borne out by the survey findings on symptoms experienced by household resident children under age 5 within the 2 weeks prior to the survey. Fever was reportedly experienced by 34% of these children within this time period compared to around 16% of children who reportedly suffered from diarrhea. Of note, mothers and caretakers reported that a similarly high proportion (33%) of resident children < 5 suffered from acute respiratory problems (e.g., trouble breathing) within the prior 2 weeks. *These three disease symptoms can vary seasonally which further supports the importance of comparing these findings (at the aggregate/population level) with any available clinical records so that any planned interventions can be timed to best coincide with the temporal risk of infection.*

Of note, there was not a significant difference for period prevalence of these three disease symptoms by age group of the child but there was a large difference by education level of the mother – consistently 6 to almost 8 times lower among mothers with secondary level education compared to mothers with no or primary level only education. Interestingly, there was variability across household wealth quintile levels but not in a consistent direction. *This should be investigated more indepth but suggests that mother/caretakers knowledge level may be a factor determining disease risk and occurrence, supporting the potential importance of disease prevention health education for all households as a HIH intervention, regardless of formal education completed.*

In addition to the lower reported period prevalence of diarrhea, the proportion of children for whom treatment or advice was reportedly sought for their symptoms was lower for diarrhea than for either fever or acute respiratory problems (69% compared to over 80%, respectively). This suggests that the former may be considered less of a health challenge although cause of death for almost 10% of child deaths was reported to be due to diarrhea. For all three symptoms, the place most often visited to seek advice/treatment was a public facility, usually a public health center. Very few visited a private facility but a substantial proportion visited a local shop or market. *The latter points to the potential to work with local shops/markets to both educate distributors regarding appropriate products to dispense as well as to help ensure they have these products in stock (e.g., PUR water purfication tablets, ORS tablets, condoms, bednets etc). There are programs in Madagascar that specialize in strengthening shop distribution to improve health at the community level and HIH should consider reaching out to such organizations to collaborate around Manombo*.

To enable a more direct comparison between the health experiences of HIH program communities in Borneo and Madagascar, additional questions about the occurrence of disease symptoms within the past 3 months at the household level (i.e., whether anyone in the household had experienced symptoms including but not limited to children).

Approximately 70% of households reported that none of their resident members (any age) had had diarrhea in the preceding 3 months; the proportion was close to 60% for no one experiencing coughing more than 3 weeks in the 3 months prior to the survey and only 40% had not experienced any household member having a fever. *There is obviously overlap between responses to these questions at the household level and similar questions asked of children in the past two weeks but*

*fever clearly stands out the main disease symptom experienced by households in target HIH communities. This underscores the value of identifying interventions to reduce fever, its causes and sequelae, as key health programming actions.*

Of note, close to 70% of households responded that someone in their household had sought treatment for an illness within the prior 12 months. Responses regarding where households sought advice or treatment if any member felt sick within the past 12 months were similar to where treatment/advice was sought for sick children, i.e., the large majority of those who sought treatment/advice visited a public health center. Secondly, they sought advice/treatment from a shop or market*. This further supports the idea of providing support (e.g., education, reliable supply chains) to shop keepers in targeted villages as a health system partner at the local level.*

For these households, accessing healthcare was often considered difficult due to the cost of drugs – mentioned more frequently –and also due to the costs for transportation and the costs of the health services themselves. And, for households in which treatment was either interrupted or not sought within the prior 12 months, about a third responded that it was due to treatment costs- for drugs, transportation and health services (in that priority order). *These responses support the idea of providing some health services closer to the communities, via mobile teams, community health workers, trained shop keepers, etc. as well as ways to offset drug costs. Many health services are free, especially those provided through public facilities, so it would be useful for HIH to investigate which services are incurring costs as a barrier to accessing those services. Clearly, if health issues were prevented through support for preventative interventions, this would contribute to lowering the cost burden for all three barriers listed*.

1. Gaffikin April 10, 2020 [↑](#footnote-ref-0)