A. Synthesis

The financing agreement signed between the French Development Agency and Inter Aide includes an evaluation of the activities at the end of the funding period.

This evaluation was conducted between March and May 2014. 3 field visits (Ethiopia, Malawi and Sierra Leone) were organized in order to collect qualitative data and consult existing quantitative data through site visits and discussions with project teams. A team of two evaluators was mobilized for this study.

The evaluation was based on a number of transversal questions focusing on the relevance, effectiveness and sustainability of hygiene and sanitation activities, the quality of the works carried out and the relevance, effectiveness and sustainability of maintenance structures set up by the projects. The monitoring-evaluation and capitalization methodology were also included in the evaluation.

A.1. Projects' description

The financing agreement established between Inter Aide and the French Development Agency aims to improve sustainable hygiene practices, access to safe drinking water and sanitation of selected regions in 6 countries: Ethiopia, Haiti, Madagascar, Malawi, Mozambique and Sierra Leone.

The specific objective of the financing agreement is to sustainably improve hygiene practices, access to drinking water and sanitation in rural populations of selected regions.

Three main results are expected:

- Result 1: the sanitation and hygiene practices of rural families have improved and allow a sustainable reduction in the prevalence of diarrhoea among children under 5 years;
- Result 2: access to safe drinking water in rural communities is sustainably improved;
- Result 3: the capacity of groups of users are strengthened and supported by the setup of autonomous maintenance systems and diffusion of water treatment products.

The projects' areas are described below:

Country	Project area	Main characteristics	History of Inter Aide intervention in the areas
Ethiopia	4 districts from the southern region of Ethiopia: Wolayta, Dawro, Gamo Gofa and Kembatta	Population density ranging from 300 to 500 persons per km2. 92% of the population is rural with an average farming plot of 0.5 ha.	Inter Aide started activities in these regions 20 years ago.

Malawi	2 areas: Phalombe district in the southern part of the country. 5 districts north of Lilongwe (Mchinji, Dowa, Kasungu, Salima and Ntchisi) in central region.	Phalombe: rural area with an average population density of 230 persons per km2. Limited water access (50%). In central region, the working ratio of hand pumps is 82% according to Government data in 2013.	Inter Aide is active in Malawi since 1992, Phalombe area is an extension of the previous operating areas (Zomba and Mulanje).
Sierra Leone	Northern part of Bombali district	Area which was particularly affected by the war and where the first aid efforts have been focusing on support to returnees (previously located in refugee camps). Population density is 54 persons per km2.	Inter Aide is active in this district since 2008.

A.2. Projects' achievement at the time of the evaluation

Ethiopia

The activities funded by the French Development Agency began in November 2012. The project is active in five woredas targeted by the project. Achievements for the years 2012 and 2013 per results are as follows:

- ***Result 1***: 20,000 people benefited from hygiene and sanitation education using combined approaches of PHAST and CLTS. 1,100 latrines have been constructed by families. The average sanitation coverage rate is 96 %.
- ***Result 2***: 30 new water points (gravity fed system outlets) were constructed and are providing water to nearly 10,500 new users. 26 spring catchments have been built and 20 km of pipes were laid for the distribution network.
- ***Result 3***: 25 artisans were trained by the project; they participated in all the stages of one or more construction works. They have acquired skills that they will use within the maintenance systems.

Malawi

The project is active in six districts. Achievements for the years 2012 and 2013 per results are as follows:

- ***Result 1***: 51 villages received training on hygiene and sanitation, 49 through the PHAST approach and 2 using the CLTS approach. 4 primary schools have also received training on hygiene and sanitation. People who received training constructed 3,030 latrines of which 2,778 improved latrines (presence of a concrete slab) and 252 ecological pit latrines (fossa alterna).
- ***Result 2***: the project has achieved the rehabilitation of 17 boreholes in 2012, 14 in 2013 and, at the time of evaluation, 1 borehole and 3 wells were ongoing; two new wells have been built as well.
- ***Result 3***: the maintenance system covering 5 districts of the Central region is now well established with sufficient coverage in terms of local artisans and local shops selling spare

parts and in the phase of consolidation. The networks comprise 107 local artisans and 54 local shops. There were a total of 1,903 pumps maintenance contracts (maintenance and repair) in 2012 and 2,097 in 2013 over a total number of 9,389 hand pumps in the five districts.

Sierra Leone

The project is now active in 6 Chiefdoms. Achievements for the years 2012 and 2013 per results are as follows:

- Result 1: 36 communities have received hygiene and sanitation education through the CLTS approach in 2012 and 81 in 2013. Communities that were triggered through the CLTS approach constructed 242 traditional latrines in 2012 and 565 in 2013 in order to reach a 100% coverage rate in sanitation. All communities that beneficiated from the project have stopped open defecation.
- Result 2: in 2012, 18 communities have benefited from a new water point and 3 have rehabilitated their water points (2 wells and a Gravity Fed System). In 2013 20 new wells were constructed and 4 rehabilitated. In addition to these physical outputs, the project trained 23 communities, with insufficient size to benefit from a new water point, in the technique of filtration and chlorination of water collected at traditional water points. At the time of evaluation 16 pumps had been rehabilitated in 2012; 27 in 2013 and 12 in 2014.
- Result 3: there are now 7 local artisans that are active in 4 Chiefdoms. The number of communities that have paid for a preventive maintenance of their pump was 178 in 2012 and 171 in 2013 over a total of 460 pumps in the 6 chiefdoms of the project.

A.3. Monitoring and evaluation

Projects	Ethiopia	Malawi	Sierra Leone
Collected data	• Number of beneficiaries for each type of activities: water points, hygiene and sanitation education; • Number of outputs: water points, latrines, pumps rehabilitation; • Implementation chronology; • Indicators for measuring the impact of the actions (diarrheal prevalence for children under 5 years, hand washing behaviour change): survey on a sample of beneficiaries as baseline in the targeted villages but not necessarily specific survey in each village at the end of the action; • Number of active local artisans, local shops selling spare parts, volume of sales, and number of contracts per type of contracts.		
Data collection	Data collection is carried out by both Inter Aide and RCDBIA teams and local stakeholders in the intervention areas.	The collection is carried out by Inter Aide and BASEDA. Data were collected through a survey conducted by a trainee on the maintenance networks.	The collection is carried out by Inter Aide team (southern and northern Bombali project). Data were collected through a survey conducted by a trainee on the maintenance networks.
Monitoring and data analysis	These data are aggregated and analysed through various data bases developed by the projects (Excel, Access). There is no standardization of monitoring and type of data collected (between countries and within countries). The data are used for activity reports, monitoring of the achievement of results. There are other analysis through KAP survey and analysis of network operation maintenance activity reports.		

Internal evaluation	Geographical and technical managers at headquarters travel twice a year (on average) over the project areas. Inter Aide mobilize specific human resources on capitalization of activities and lessons learned.
External evaluation	External evaluations are conducted by representatives of donors and other external consultants. Local authorities are not usually invited to these assessments.

The monitoring and evaluation can be improved on the following indicators:

- Diarrheal prevalence for children under 5 years: by specifying the measurement methodology (either a large survey with a low frequency or systematic measurements in the beneficiary villages, standardize the methodology for measuring the prevalence of diarrhoea);
- behaviour change (same methodology as for the diarrheal prevalence based on a large survey or systematic monitoring of villages , standardization of the monitoring indicators within the various projects);
- it is preferable to have the same measurement methodology for the measurement of diarrheal prevalence and behaviour changes (ie large survey with lower frequency versus systematic local measurement);
- water quality analysis in Malawi for borehole rehabilitation;
- capacity building and skills improvement of institutional actors: measuring progress requires to have a baseline and final measurements, the indicators used to measure the progress must be explicit and the monitoring should be mainstreamed (on the principle of what is developed in Ethiopia - see appendix 2.G).

A.4. Hygiene and sanitation activities

Evaluation	Ethiopia	Malawi	Sierra Leone
Community mobilization approach	The teams are proficient with the CLTS approach and they have combined it with specific activities coming from the PHAST approach. The results are tangible.	The team is proficient with the PHAST approach. A specific approach for the schools has been developed (CHAST).	The team is proficient with CLTS approach, as for Ethiopia it is combined with specific activities from PHAST during the follow up phase.
Tools used for sensitization	The tools are of good quality, there are some possible improvements listed in the report.	The tools are well designed and adapted to the local context.	The PHAST tools are not much contextualized showing a lack of ownership of the tools by the team.
Achieved coverage rate	In average above 90%	In average 70%	100% in the triggered villages

Behaviors changes	Behavior changes are tangible at the household level (sanitation, hand washing and water storage).	A survey showed an improvement of the hygienic behaviors.	A survey showed an important improvement in the hygienic behaviors.
Strong points of the implemented approaches	The two used approaches are well implemented and show tangible results.	The PHAST approach is well mastered. There is a diversification of the sanitation structures proposed by the project.	CLTS approach is well mastered and brings tangible results. Hand washing behavior seems to be rooted within the communities.
Weak points of the approaches	Similar as Sierra Leone keeping in mind that the local authorities are already playing an external supervisory role.	Latrines are seldom equipped with hand washing facilities.	There is no certification ceremony after the communities have achieved their ODF status.
Duplication factors	Similar as Sierra Leone keeping in mind that the local authorities are already playing an external supervision role.	A sanitation marketing approach seems more appropriated.	CLTS seems to be a success in the visited villages. Communities have put in place internal control mechanisms to avoid a drift back to the OD status. These are duplication factors of traditional latrines.
Transfer to the local authorities	The teams work in close collaboration with the health extension workers.	There is no transfer mechanism toward local authorities at the time being.	There is no transfer mechanism toward local authorities at the time being.
Post activity follow up	There is no systematic post activity follow up.		

Overall assessment of the evaluators:

The hygiene and sanitation education approaches implemented in the three projects are very relevant and have measurable impacts on behavioural changes. In the contexts where open defecation remains a priority (Ethiopia and Sierra Leone), the CLTS approach seems to be relevant although there is no data to prove the sustainability of the constructed latrines. The establishment of a certification process could create an additional control factor for the communities that tend to fall back into the practice of open defecation. In Malawi, where the issue of open defecation is less predominant, the implementation of a sanitation marketing

approach could have a beneficial effect on the sustainability of the sanitation coverage although there is no data on the sustainability of sanitation coverage after the project intervention. Such data should be available soon once the survey conducted in a former intervention area of Inter Aide is completed.

A.5. Quality of the infrastructures

Gravity Fed Systems

Inter Aide, since the beginning of its activities in Ethiopia in 1989 has built a large number of Gravity Fed Systems.

Spring catchment

Spring catchments made by Inter Aide are generally well protected from erosion and seepage through the use of clay and a plastic coating. The installed fittings and pipes allow for an easy drainage and cleaning of the collection boxes.

Distribution network

The installed pipes are PVC, mainly for cost reasons.

Installed valves

To minimize the maintenance of valves, IA built these systems without them. It is a guarantee of sustainability due to the low quality valves in Ethiopia.

Water outlets

The Gravity Fed Systems outlets are made up of several items: cattle trough, washing slab, standpipe and protection fence.

These infrastructures are of good quality and sustainable throughout time, however, it is recommended to add an area to facilitate the infiltration of water from the drainage system in the case of a low slope and clayish area.

Infrastructure / cost beneficiaries

The cost is on average 228 birr per beneficiary, which is less than 9 euros per beneficiary.

Water points

The main positive aspects are:

- Great care has been taken to estimate the capacity of the water points when digging or increasing the water column (digging at the end of the dry season, the water column size needs to meet minimum size);
- Safety procedures are very satisfactory during the digging phase of the wells;
- The superstructure of the wells is of good quality and does not decline over time.

The main negative aspects are:

- No systematic test of the water quality in Malawi;
- The drainage infrastructures are sometimes clogged, the technical choice for drainage must take greater account of the quality of soil (especially identifying the presence of clayish soil);
- In Sierra Leone dewatering pumps are necessary to facilitate the digging below the level of the water.

Unit Cost

- In Malawi the average cost of borehole rehabilitation is 740 euros which translates into a unit cost of 3 euros per person.
- In Sierra Leone the average cost of a well 12 meters deep is 1,860 euros. This cost translates into a unit cost of 6.2 euros per person.

A.6. Chlorination of water at the household level, a pilot approach

The activity of water chlorination at the household level should not prevent from building a minimal protection of the local water point when necessary.

The challenge of scaling up this activity is linked to the generalization of the protection of local water points which requires a larger budget. There is a need either to increase the funds available for the scaling up or ask the communities to protect the water point through their own means.

There is an uncertainty about the amount of treated water consumed by the users. Preliminary estimates indicate that this level is low (less than 1 liter per person per day), this ratio must be evaluated consistently before considering scaling up the activity.

Regular monitoring of these communities is necessary to ensure that good water quality in maintained (turbidity and residual chlorine).

Overall, the chlorination is an alternative that offers a solution to families who otherwise would have no access to protected water. This approach is implemented by Inter Aide in Haiti and by other NGOs in Kenya. In the latter two cases, the raw water has low turbidity (spring catchment).

A.7. Maintenance systems

Evaluation	Ethiopia	Malawi	Sierra Leone
Scope of the maintenance systems	Pilot activities are ongoing in Ofa, Damot Sore and Kindo Koisha.	The two maintenance systems (BASEDA and Inter Aide) cover 10 districts with a total of 22,278 pumps (all type considered).	The maintenance activities are concentrated on Bombali district which has 1,396 boreholes and wells equipped with hand pumps.
Number of pumps beneficiating from the systems	In Ofa over 189 registered Gravity Fed Systems, 110 were evaluated in 2012 (83% were operational and 11 systems have been maintained and repaired).	In 2013 in the 5 districts covered by Inter Aide, 2,099 maintenance and reparation contracts were signed.	In 2013 on the 12 chiefdoms, 225 preventive maintenance contracts were signed and 143 pumps rehabilitated.

Adhesion ratio towards maintenance	NA	Difficult estimation of the ratio due to the various possibilities for the communities to repair their pump. A range of 29% to 84% has been calculated with the available data (ratio of water committees).	On both projects we have estimated an adhesion ratio that varies from 14% to 24% of the villages.
Cost of maintenance system	NA	Ranging from 130 k€ to 180 k€ per year	An estimation of about 100 k€ per year
Efficiency of maintenance systems	No sufficient data	The efficiency has been demonstrated through the analysis of two hand pumps survey with two years interval.	No sufficient data
Strong points of the maintenance systems	The maintenance system is strongly linked with the water bureau, a guaranty of sustainability.	A large number of pumps covered by the maintenance systems (representing 40% of the total number of pumps in Malawi) which provides a large transaction volume notably for the spare parts supply chain.	The approach is based on local artisans to cope with the non VLOM characteristic of the pumps.
Weak points of the maintenance systems	The maintenance system relies on a large number of actors without proper outreach means (water bureau, federation of water associations) and without possibility to fund them (Ethiopian policy).	This is not a weak point as such, but considering the actual scope of the maintenance systems it now becomes important to be able to benchmark the efficiency of Inter Aide approach with others in Malawi.	Low number of pumps which will be a constraint in the setup of a spare parts supply chain.

The three projects have, each, established some maintenance systems adapted to each context. The systems' efficiency is good, the impacts positive and measured in the case of Malawi (the only country where there is enough data) and these activities should be carried on.

The need to monitor and evaluate the impact of maintenance systems involves putting in place mechanisms for regular collection of data on the operational status of hand pumps and gravity systems diagnosis.

With an objective of sustainability and transfer to local authorities at some time horizon, it is important to strongly associate the latter to these mechanisms. This is what is happening in Ethiopia. In Malawi the project should improve the interaction with the water bureau (continue the progressive transfer of the local artisan network in Salima district) more especially on the

subject of data collection. In Sierra Leone the project should support the water bureau in the organization of its data collection (tools and resources are already present).

A.8. Sustainability

Evaluation	Ethiopia	Malawi	Sierra Leone
Management of water point by the committees	The management of the gravity fed systems by the associations is sustainable. The systems that were built in the 90s are still operational and the water committees are still in place.	The committees that are setup have the capacity to maintain the pumps given the working ratios of the pumps in the districts.	The field visits have shown an enabling environment for the funds collection within the communities (transparency, responsibility) which is a very good point.
Partnership with the local authorities	Inter Aide as setup partnerships with the water bureau and the federations of users. These partners still need to be supported to allow for the withdrawal of Inter Aide in the long term.	There are close relationships with the water bureau notably for the handover of the local artisans' network in the district of Salima.	Inter Aide is putting consequent effort to build a strong relationship with the water bureau of Bombali district. This relationship seems very positive and constructive for the sector coordination at the district level.
Local artisan network	This network is made of local builders, water extension workers trained by Inter Aide allowing improving the technical sustainability for the small and medium repairs of the gravity fed systems.	The network is sustainable with a very low turnover of the local artisan on a long period (10 years).	The system is too recent to be evaluated in terms of sustainability.
Spare parts supply chain	There is no supply chain of spare parts at the moment. Some test and experiences are being implemented.	A supply chain is in place and there are two experiences to improve its sustainability : Privatization of part of the supply chain; Transfer of the distribution cost to the spare parts importers at the national level.	There is no supply chain at the moment. Some test and experiences are being implemented.

Management structure of the maintenance systems	The water bureau, the users' federations and the water associations are involved into the management. Some training performed on the preventive maintenance (regular diagnostic).	Both maintenance structures are essential for animating the local artisans and local shops networks and ensuring their sustainability. They have to be subsidized.	The management structure is still on the setting up phase but will need as well external financial support to be able to maintain its activities (for the moment this is a project structure).

Sustainability of activities is high; the quality of the water infrastructures is a guarantee of technical sustainability as well as the ability of the water committees. The maintenance systems put in place provide users with tools and mechanisms to repair and maintain the pumps and infrastructures which is a further guarantee of sustainability.

The quality of the collaborations with local authorities for possible transfer in the future is variable between projects but they are all oriented towards a transfer of competence and capacity building. In the case of water points monitoring (Malawi and Sierra Leone), the development of simple and replicable procedures for data collection is a challenge that lie ahead.

A.9. Lessons learned

Community Outreach

- A relevant Community approach, adapted to the rural context in Ethiopia: it is a lesson that may seem trivial, but given the actions of other development partners in the region, it remains a good practice important to emphasize.

Hygiene education and sanitation

- CLTS approach is effective in mobilizing communities.
- CLTS and PHAST approaches are complementary.
- The sanitation marketing approach should be used as post ODF strategy.

Hydraulic structures

- Simple gravity systems adapted to the Ethiopian context that do not require regular maintenance.

Maintenance Systems

- The structure in charge of coordinating and animating the maintenance system should be subsidized.
- Local artisans and shops of the maintenance network have a low turnover over the years; it is a guarantee of sustainability.
- With no large scale system of monitoring and evaluation it is difficult to prove the impact of maintenance systems.

Coordination and institutional approach

- Weak coordination at regional level (Ethiopia) is regrettable because it provides unnecessary constraints over Inter Aide projects and does not allow to effectively disseminating pertinent approaches and technical choices: IA / RCDBIA having positive approaches with very positive results, should disseminate its good practices among the regional water and sanitation sector.

- Despite relevant approaches and important project sizes, Inter Aide institutional weight is still limited in most countries.

A.10. Recommandations

Ethiopia

- Improve drainage of gravity fed systems outlets.
- Use of hydraulic modeling software for large systems.
- Improve the size and drawings of hygiene and sanitation education tools; shorten the plays for hygiene and sanitation education.
- Strengthen the network of shared experiences at the Southern Region level, including best practices in terms of community and technical approach.
- It would be interesting that RCDBIA integrates the CLTS approach in its methodology for the construction and / or rehabilitation of hydraulic structures.
- The Federation of Associations of water points should be managing of the spare parts supply chain: Inter Aide could provide support by creating a revolving fund through a gift of parts to start the initial stock.

Malawi

- In view of the maintenance systems scope, it would be interesting to benchmark the performance and efficiency of these systems compared to other districts where Inter Aide is not present.
- Establish a monitoring system of the hand pumps working status easily transposable to local authorities.
- Stimulating the demand for pump repair by putting more effort on lobbying at the traditional authorities level (presentation of the functioning rate of the pumps to the annual meetings of districts)
- Develop more revenue generating activities for local artisans.
- Assess the impact of the security systems for the hand pumps (padlock installation).
- Systematically analyze the water quality during borehole rehabilitation.
- Improve the drainage infrastructure of the water points.

Sierra Leone

- Improve data collection for local artisans' activities.
- Provide more resources to the project for digging the wells (dewatering pumps).
- Put in place a monitoring of unit consumption and water quality for communities practicing chlorination of raw water at household level.
- Invest more effort on tools for hygiene and sanitation education (contextualization of tools).
- Consider a closer collaboration with the water bureau of Bombali District: one of the priority need is the implementation of the water points monitoring system in the district. It is also in the interest of Inter Aide to facilitate regular monitoring and access to reliable data. There is a convergent interest and Inter Aide should support the water bureau in this activity.