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Evaluation Akvo PPP Phase 3

Final report

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Management summary

This report presents the findings of the evaluation of the third phase of the public private partnership between the Directorate-General for International Cooperation (DGIS) of the Ministry of Foreign Affairs of the Kingdom of the Netherlands (MFA) and Akvo, a not-for-profit foundation that creates open source, internet and mobile software and sensors. The third phase of this public private partnership (referred to as "PPP3") ran from April 2014 until March 2017. The evaluation was conducted by PwC for the department of Inclusive and Green Growth (IGG) at MFA, during the period January-May 2017.

The evaluation methodology consisted of three main parts:

- A contribution analysis was conducted based on the findings of ten case studies of cooperations between Akvo and its partners. The case studies were based a review of available written information and (mainly) on interviews with Akvo and the partner(s) involved. We also compiled information on two cases in which partners decided not to work with Akvo or to discontinue an existing cooperation.
- An analysis of the software development process conducted by Akvo was performed based on available documents and interviews.
- An analysis of relevant documents and several additional interviews were conducted to gain more insight in the PPP between Akvo and DGIS.

Objectives of PPP3 and results presented by Akvo

Akvo's original objectives are formulated in the proposal of the PPP phase 3 as listed below.

- Support the further improvement and development of Akvopedia, Akvo RSR and Akvo Flow – and the integration of all Akvo tools.
- Allowing access to the Dutch water portfolio online using Akvo RSR and providing support to all partners in reporting progress directly from the field.
- Assist DGIS in the development of an IATI-compliant results-based reporting and monitoring standard.
- Providing tools to DGIS partners for IATI-compliant results-based monitoring and reporting.
- Build local capacity in reporting and monitoring to all local partners related to this program, via hubs in East and West Africa, Asia and South East Asia.
- Introduction of Akvo RSR in Kenya, Indonesia, Bangladesh, Benin and Mali.
- Rollout of real-time mobile based monitoring (Akvo Flow) of water points at scale in five priority countries: Ethiopia, Liberia, Indonesia, Nepal and Mali.
- Introduction of concepts that allow direct user feedback on water point status (feedback loop, to drive maintenance).
- Developing of a narrowcasting system, to visualize data in appealing ways on a screen at DGIS.

We note that these objectives are not SMART. In order to measure the PPP's performance, Akvo has defined 79 indicators. A subset of 27 indicators was chosen based on the information IGG requested, hence the original PPP objectives were brought in line with the objectives of IGG and were hence replaced by the 27 new objectives presented in Akvo's progress reports. Most of the 27 operational objectives have been achieved according to Akvo's reports. This has been confirmed by IGG.

Conclusions of the evaluation

Based on the case studies and interviews conducted, we have drawn conclusions in response to the evaluation questions posed by IGG. We conclude as follows:

- ***Akvo Flow can help create conditions for optimal targeting of beneficiaries, but Akvo does not contribute directly to improved WASH service delivery within the time span of PPP3.*** In some cases we studied, the use of Flow in particular helps to ensure that the right beneficiaries are targeted by WASH projects (e.g. Cardno) and interventions can be targeted to improve the infrastructure that most requires it (Mali water point mapping). This makes Flow particularly of added value to governments of developing countries. International NGOs are often capable of conducting such targeting on their own. However, we have not seen examples where Flow has made a difference directly to the effectiveness of a project implemented by a partner. This also applies to long-term users of Flow. The use of RSR does not support improved service delivery.
- ***The use of Akvo tools does not contribute to sustainability of WASH services within the timespan of PPP3.*** The case studies show no examples of the use of Akvo tools contributing to sustainability of WASH services. Although via Akvo Flow the functionality of WASH facilities can be monitored easily over time, this is not something that we see occurring yet. In fact, the impact of Akvo tools on sustainability of WASH services cannot be observed within the timespan of PPP3, but will be visible at a later stage. Besides, in all of the cases, either significant additional investments are required or sustainability is dependent on new initiatives taken by Akvo's partners or project end users, or both.
- ***Akvo made a contribution to IATI compliance before and during PPP3, while alternative solutions have also become available.*** In the years leading up to PPP3, Akvo RSR made a significant contribution to enabling IATI compliance by development partners, as it developed the technical solutions that allow data to be reported in an IATI-compliant manner. However, it was only during PPP3 (in 2015) that it released an RSR update that allows development partners to publish their own data using RSR. Today, and already since 2014, alternative solutions are available on the market to allow organisations involved in WASH service delivery to comply with IATI without the need to support Akvo. In this sense, support to RSR activities has been somewhat redundant.
- ***The scope of information in Akvopedia has been significantly broadened during PPP3.*** The increase of the number of articles (contributed by users) in Akvopedia and of new WASH portals introduced by Akvo in cooperation with several of its partners imply that the scope of the content in Akvopedia has significantly broadened during PPP3. The number of visits to Akvopedia also increased significantly beyond the PPP3 target. This indicates appreciation from users on the content presented on Akvopedia. Taken together, these findings are a good indication of appreciation of users for the scope of information on Akvopedia.
- ***Akvo's software development process follows modern standards and is considered efficient.*** Based on Akvo's own progress reviews the overall progress has the status 'green', which implies its objectives have been achieved (almost) completely. Akvo's team builds and supports a SaaS offering that contains aspects of a mature offering like back-up and restore policies, disaster recovery, intrusion security and privacy protection. These are all aspects that can be expected from a professional service provider and Akvo is actively managing these aspects which indicates an efficient software development process. We consider Akvo's IT organisation to be efficient.
- ***Some observations show that efficiency of PPP3 from a funder's perspective could have been better.*** No integral efficiency assessment of PPP3 as a whole was conducted. Observations of factors increasing and decreasing efficiency of the PPP show that efficiency may have been somewhat limited by factors that MFA could have influenced. Particularly when it came to bringing the Embassy portfolios online, limited guidance from MFA with regard to Akvo's communication with Embassies and limited information to the Embassies about their options for bringing water project portfolios online in an IATI-compliant manner appear to have resulted in some inefficiencies in the time spent by Akvo on interaction with the Embassies and their local partners. If IGG would have proactively guided this interaction by instructing Akvo and informing the Embassies in more detail in advance, these inefficiencies could have been prevented.

Recommendations

Based on our findings, we make the following recommendations to MFA.

- ***Carefully assess the added value of continued co-funding of Akvo activities.*** The evaluation of the Schokland Agreements concluded on PPP1 that Akvo was almost financially sustainable at the end of that first phase. This means that MFA's continued financial support for Akvo in phases 2 and 3 of the PPP has a high risk of disrupting the level playing-field in the market for services similar to those provided by Akvo. Furthermore, the case studies show that Akvo's niche is in providing the tooling and services to partners who prefer a user-friendly, full-service solution without being required to develop or manage IT in-house. With development partners having become more IT-savvy in recent years, the group of organisations that benefit most from Akvo's tools and services is shrinking as a proportion of all development organisations. We therefore caution MFA to continue co-funding Akvo's activities without a careful assessment of where such co-funding would add value and for which group of users.
- ***Limit future support to the development of tools whose functionality will add to effectiveness and sustainability of development projects.*** It is evident from our findings that the added value of RSR to IATI compliance is no longer unique; good, and sometimes cheaper, alternatives exist. Further financial support to RSR development will likely distort the level playing field for competition. Furthermore, we have shown that RSR does not contribute to effectiveness or sustainability of WASH service delivery. As a result, any future government support to Akvo should focus on tools that can reasonably be expected to add to the effectiveness and sustainability of development projects and/or targeted capacity building.
- ***Recommendations on software development.*** The goals of the PPP are not specific with regard to Akvo's software development activities. We advise to either make these more specific or to explicitly remove this from the KPIs and allow Akvo to develop according to their vision and the needs of their stakeholders, economic buyers and users. If the chosen direction is to be more specific, we advise to focus on the output of the software development process, i.e. the products and features developed. We advise to take a clear position on the subject of open-source software development. Does it suffice to make the software public or should the software be useable for individual users without Akvo's support?
- ***In future cooperations MFA should define proper and adequate objectives, results, indicators and targets.*** The objectives set for PPP3 are not SMART, and were translated into desired results by Akvo and MFA at the start of the PPP because these results would provide more meaningful insight into the achievements of the PPP. As our discussion of the results reported in the PPP3 final report shows, the results measured were not a balanced representation of Akvo's achievements, were not sufficiently SMART for all of them to be objectively assessed and had indicators that were not balanced in terms of quantitative and qualitative measurements. Also, the targets on multiple indicators were adjusted in the course of the PPP, when they turned out not to be attainable within the PPP3 period. Finally, no objectives, results, indicators or targets were defined to capture MFA's contribution to the PPP. As a result, assessing MFA's role in the PPP cannot be evaluated. For future cooperations with external partners, we recommend that more effort is made by MFA to set technically sound (i.e., SMART) objectives and results, and define appropriate indicators to measure them, with relevant and attainable targets. Having experienced the challenge of setting proper objectives, results, indicators and targets in PPP3, Akvo has hired a monitoring & evaluation specialist and started to develop its own theory of change. MFA should similarly invest time and effort in getting the right objectives and measurements in place in future projects and programmes. In the case of any future PPP, in which it is assumed that MFA itself makes a substantial material contribution (i.e., performs actual activities, in addition to merely funding them), setting appropriate objectives, results, indicators and targets applies to MFA's contribution equally.

1. Introduction

This report presents the findings of the evaluation of the third phase of the public private partnership between the Directorate-General for International Cooperation (DGIS) of the Ministry of Foreign Affairs of the Kingdom of the Netherlands (MFA) and Akvo, a not-for-profit foundation. The third phase of this public private partnership (referred to as "PPP3") ran from April 2014 until March 2017.

The evaluation was conducted by PwC for the department of Inclusive and Green Growth at MFA, during the period January-May 2017. The PwC team consisted of:

Bas Warmenhoven (project leader)
Michaël Maurer
Livia Remeijers

The evaluation was performed under the responsibility of Anton Koonstra, partner at PwC.

1.1. High-level evaluation approach

The evaluation methodology consisted of three main parts:

- A contribution analysis was conducted based on the findings of ten case studies of cooperations between Akvo and its partners. The case studies were based a review of available written information and (mainly) on interviews with Akvo and the partner(s) involved. We also compiled information on two cases in which partner decided not to work with Akvo or to discontinue an existing cooperation.
- An analysis of the software development process conducted by Akvo was performed based on available documents and interviews.
- An analysis of relevant documents and several additional interviews were conducted to gain more insight in the PPP between Akvo and DGIS.

1.2. Contents of this report

The remainder of the report is divided in the following chapters:

- Chapter 2 presents the context of the third phase of the Akvo PPP.
- Chapter 3 presents our findings on effectiveness: the extent to which working with Akvo has contributed to improved service delivery in WASH projects of its partners, as well as contributed to the sustainability of the WASH services delivered in those projects. This chapter also presents our findings on the effects of specific tools, namely RSR and Akvopedia.
- Chapter 4 presents our findings on efficiency. In this chapter we also address several aspects of working with Akvo in a PPP.
- Chapter 5 presents our overall conclusions and recommendations.

The case studies are included in appendix A to this report. Appendix B presents the sources used in the evaluation and appendix C presents the interviews that were conducted.

2. Context of phase 3 of the Akvo PPP

In this chapter we describe:

- the context of phase 3 of the Akvo PPP (paragraph 2.1);
- the results of the previous two phases (2.2); and
- the main goals of the third phase (2.3).

2.1. Reason for existence of partnership

As part of the sustainable development goals (SDGs), the Department for Inclusive and Green Growth (IGG) aims to contribute to achieving clean water and sanitation for all people. In order to accomplish access to clean water for everyone, it is important to identify the areas with a lack of access to clean water. Hence, there is a need for information on existing infrastructure and its quality. Hence, national mapping of water points in developing countries results in knowing where water points are located such that they can be maintained, but will also provide input on where new water points need to be created in order to serve the once most in need.

Besides, IGG has felt the need to contribute to increased transparency with regards to the allocation of resources within the development sector in order to increase their effectiveness in tackling poverty. In 2011 DGIS adopted the ambition to become IATI-compliant and decided to publish its entire project portfolio online on the IATI registry.

In this context, IGG has deemed it in its interest to collaborate with Akvo, as Akvo has the expertise to develop and continuously improve mapping tools that do just what DGIS was looking for: collect and visualise information about existing water infrastructure and its quality. According to IGG, Akvo is one of the first organisations to develop this technique in the water and sanitation sector and has potential to expand to other sectors. Furthermore, IGG considers Akvo to be successful in making its tools applicable as well as training local partners in how to use them and increasing data awareness and use. In addition, Akvo was aware of the IATI movement and had the expertise to publish data on the IATI registry. Based on this (informal) theory of change, Akvo would add value through the development of tools as well as the provision of their services in terms of training and consulting, while increasing transparency in the development aid sector. Hence, the establishment of a PPP between IGG and Akvo. In addition to the funding from IGG, Akvo also received funding from service income, Cisco, Gates and Hilton grants.

2.2. Phases 1 and 2 of the PPP

In 2007 Akvo received a start-up subsidy from the Schokland Fund, initiated by the Dutch Ministry of Foreign Affairs (MFA). The aim of the Schokland Fund was to enhance the Dutch contribution towards the Millenium Development Goals (MDGs) by stimulating partnerships and innovation. The Akvo Schokland project, which can be seen as the first phase of the PPP (PPP1), started in 2007 and ended in 2010.

In 2014 the 'Evaluation of Schokland and Millennium Agreements 2008-2013' was published. Part of the report is a case study on Akvo, titled 'Internet for water and sanitation, Akvo'. In the context of the Millenium agreements, Akvo used the subsidy for the development of Akvopedia, Akvo Marketplace (tool to support partners to attract funds for water and sanitation projects), and Akvo RSR, as well as for relations management and brokerage with international partners.

At the end of PPP1 in 2010, Akvopedia had been viewed by more than 150,000 viewers. The Akvo platform was used by 220 partners and the number of projects that were active on the Akvo marketplace was 214, representing a total value of more than 10 million Euros.

In the evaluation Akvo's success factors are formulated as follows:

- Firstly, thanks to the subsidy, Akvo could focus on the development of its tools and organisation.
- Secondly, at the end of PPP1 Akvo was almost fully financially sustainable.

- Thirdly, during PPP1 Akvo increased the amount of partners that use Akvo tools (e.g. ICCO, Cordaid and Aqua for All in Uganda, and 11 Bangladesh WASH Alliance partners).

Another important outcome of the Schokland PPP was the continued cooperation between MFA and Akvo in the area of aid transparency. Furthermore, the Akvo Flow tool was used in various projects funded by MFA and the Directorate Inclusive and Green Growth (IGG) showed its interest in increasing its own transparency by wanting to publish its entire project portfolio online using RSR.

The evaluation also identified some failure factors:

- Firstly, there was a lack of cost awareness at the level of end users, which could be a risk to sustainability when NGO stop funding these services for their partners.
- Secondly, awareness and capacity to deal with privacy and security aspects of Akvo technology was not always optimal among local users.
- Thirdly, some partners argued that Akvo's trainings and support were not enough to achieve the desired level of sustainability of Akvo's service.

No evaluation was conducted of phase 2 of the PPP. Though, the evaluation of the Schokland Agreements states that Flow was developed in the years after Schokland (2011-2013), also referred to as phase 2 of the PPP.

It is worth mentioning that Akvo briefly worked together with Zimmerman & Zimmerman as a subcontractor during phase 2 of the PPP. This happened when MFA asked to create the OpenAid.nl website. Later on Zimmerman & Zimmerman started to develop its own tools. Hence, Zimmerman & Zimmerman has not been part of PPP phase 3 and is in practice a competitor of Akvo when it comes to data visualisation tools and services.

2.3. Main goals of PPP phase 3

2.3.1. Objectives, results and indicators

Akvo's original objectives are formulated in the proposal of the PPP phase 3 as listed below.

- Support the further improvement and development of Akvopedia, Akvo RSR and Akvo Flow – and the integration of all Akvo tools.
- Allowing access to the Dutch water portfolio online using Akvo RSR and providing support to all partners in reporting progress directly from the field.
- Assist DGIS in the development of an IATI-compliant results-based reporting and monitoring standard.
- Providing tools to DGIS partners for IATI-compliant results-based monitoring and reporting.
- Build local capacity in reporting and monitoring to all local partners related to this program, via hubs in East and West Africa, Asia and South East Asia.
- Introduction of Akvo RSR in Kenya, Indonesia, Bangladesh, Benin and Mali.
- Rollout of real-time mobile based monitoring (Akvo Flow) of water points at scale in five priority countries: Ethiopia, Liberia, Indonesia, Nepal and Mali.
- Introduction of concepts that allow direct user feedback on water point status (feedback loop, to drive maintenance).
- Developing of a narrowcasting system, to visualize data in appealing ways on a screen at DGIS.

We note that these objectives are not SMART. In other words, they are not sufficiently specific, measurable and results-oriented to allow an assessment of the extent to which they have been met. Therefore, throughout PPP3, IGG and Akvo have jointly agreed on aligning the objectives with the obtained results, hence discarding the original objectives for the practical purpose of measuring Akvo's performance.

In order to measure the PPP's performance, Akvo has defined 79 indicators (see 'Annex 1 Balanced score card' of the proposal). A subset of these indicators is used in Akvo's annual reports to measure the delivery of the results within the PPP phase 3. The set of 27 indicators was chosen based on the information IGG requested, hence the original PPP objectives were brought in line with the objectives of IGG and were hence replaced by the 27 new objectives presented on the next page.

27 indicators used to measure Akvo's performance in PPP phase 3

Akvopedia

1. Akvopedia software is continuously improved, source code is shared online and documented with an open license.
2. Increased availability of WASH technology and solutions online.
3. Users can access Akvopedia via phone app.
4. Increased accessibility and knowledge of Akvopedia in the WASH sector.

Akvo RSR

5. Akvo RSR software is continuously improved, source code is shared online and documented on github with an open license.
6. Increased use of the Akvo RSR platform.
7. Users can access the RSR Up phone app for field reporting.
8. Organisations can use Akvo RSR software to become IATI compatible and to import and export their projects to the IATI registry.
9. Akvo RSR is used for tracking progress about projects over time (paperless reporting).

Akvo product integration

10. Integration between Akvo products.
11. Integration to Akvo products (availability APIs).

End-user feedback systems

12. Organisations can use Akvo Flow to enable feedback loops.

Opencast

13. Development of Opencast tool.

Partnership development

14. Akvo has an increased and diverse partnerships portfolio.

WASH portfolio IGG online

15. WASH portfolio of DGIS (IGG-Water) is published online.
16. Increased use / outreach of the IGG Water platform.

Dutch embassy portfolio

17. WASH portfolio of Netherlands Embassy in target countries is published online.

East Africa

18. Roll out of mobile based monitoring in East Africa.
19. Activating local reporting in East Africa.

West Africa

20. Roll out of mobile based monitoring in West Africa.
21. Activating local reporting in West Africa.

South Asia

22. Roll out of mobile based monitoring in South Asia.
23. Activating local reporting in South Asia.

South East Asia

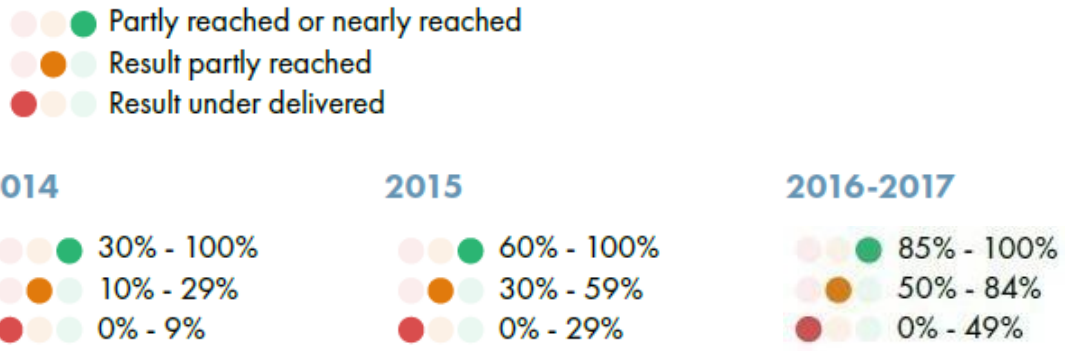
24. Roll out of mobile based monitoring in South East Asia.
25. Activating local reporting in South East Asia.

Communication and outreach

26. Increased Akvo outreach to partners.
27. Strengthened internal collaboration and communication.

2.3.2. *Measuring progress of PPP phase 3*

The progress in relation to the new objectives is indicated by means of a traffic light method. The traffic lights relate to the objectives of the entire PPP3 period. Hence, the traffic lights indicate whether an indicator is on course, in the view of the total activity period. The traffic light interpretation is presented as follows:



Red lights indicate that a result is under-delivered, orange lights that a result is partly reached, and green lights that a result is reached or nearly reached. It is rather difficult to compare the traffic lights between the three years of the PPP phase 3, because the progress percentages in 2014 are not identical to the progress percentages in 2015 and 2016-2017. However, the main goal of the PPP phase 3 is that all targets show green lights in the final year of the PPP phase 3. The next chapter presents the progress of all the targets for 2014, 2015 and 2016-2017.

3. Effectiveness of PPP3

In this chapter we present:

- the key achieved results according to the results framework (paragraph 3.1);
- Akvo's contribution to improved WASH service delivery (3.2);
- Akvo's contribution to sustainability of WASH services (3.3);
- the contribution of RSR to IATI compliance (3.4); and
- an assessment of the scope of information in Akvopedia (3.5).

3.1. The key achieved results according to the results framework

The progress of the results in 2014, 2015 and 2016-2017 are presented in the table on the next page. At the start of PPP phase 3 (i.e. 2014) there are 6 results red, 5 results orange and 16 results green. At the end of PPP phase 3 (i.e. 2017) there are 2 results red, 4 results orange and 21 results green. This would imply that Akvo has achieved most of the agreed results within the PPP3 timeframe.

Notable result indicators for which the targets were not achieved are:

11. Integration to Akvo products (availability APIs) –According to the report the target of developing a fourth API, in addition to two existing ones for RSR (read and write) and one for Flow (read only). From the text it appears that this fourth API was intended for Akvo Lumen, but was not delivered as part of the PPP. The text also mentions that Akvo wanted to develop a write API for Flow. Akvo has indicated that developing an API for Lumen was an objective, but not one that was part of PPP3, and that the development of a write API for Flow was. Both APIs have in fact been completed in May 2017, so only two months after the end of the PPP.

13. Development of opencasting tool – Akvo reports that it has noted that there is not much interest in Akvo Opencast, which means that there are no opportunities to actually apply it and develop it for use.

15. WASH portfolio of DGIS (IGG-Water) is published online. and 16. Increased use / outreach of the IGG Water platform – Akvo reports that only 14 projects were published online out of the target of 50. However, together with MFA it was decided that only 23 projects warranted publication, given their content and end dates. Akvo expects another 9 project to be published online in the months directly following the end date of the PPP. The number of pageviews also lagged significantly behind target, at 189 against a target of 2,000. Akvo explains this by mentioning the platform is currently stand-alone, i.e. not integrated in or linked to the IGG water website.

Progress of results (source: Akvo annual reports to IGG)				
	2014	**2015**	**2016-2017**	**Progress trend**
Akvopedia				
1. Akvopedia software is continuously improved, source code is shared online and documented with an open license.	Green	Green	Green	→
2. Increased availability of WASH technology and solutions online.	Green	Green	Green	→
3. Users can access Akvopedia via phone app.	Orange	Orange	Green	↑
4. Increased accessibility and knowledge of Akvopedia in the WASH sector.	Green	Green	Green	→
Akvo RSR				
5. Akvo RSR software is continuously improved, source code is shared online and documented on github with an open license.	Green	Green	Green	→
6. Increased use of the Akvo RSR platform.	Green	Green	Green	→
7. Users can access the RSR Up phone app for field reporting.	Orange	Orange	Orange	→
8. Organisations can use Akvo RSR software to become IATI compatible and to import and export their projects to the IATI registry.	Green	Green	Green	→
9. Akvo RSR is used for tracking progress about projects over time (paperless reporting).	Red	Red	Green	↑
Akvo product integration				
10. Integration between Akvo products.	Orange	Orange	Green	↑
11. Integration to Akvo products (availability APIs).	Green	Green	Red	↓
End-user feedback systems				
12. Organisations can use Akvo Flow to enable feedback loops.	Green	Green	Green	→
Opencasting				
13. Development of opencasting tool.	Orange	Orange	Orange	→
Partnership development				
14. Akvo has an increased and diverse partnerships portfolio.	Green	Green	Green	→
WASH portfolio IGG online				
15. WASH portfolio of DGIS (IGG-Water) is published online.	Red	Orange	Orange	↑
16. Increased use / outreach of the IGG Water platform.	Red	Red	Red	→
Dutch embassy portfolio				
17. WASH portfolio of Netherlands Embassy in target countries is published online.	Orange	Red	Green	↑
East Africa				
18. Roll out of mobile based monitoring in East Africa.	Green	Green	Green	→
19. Activating local reporting in East Africa.	Green	Green	Green	→
West Africa				
20. Roll out of mobile based monitoring in West Africa.	Green	Green	Green	→
21. Activating local reporting in West Africa.	Red	Red	Green	↑
South Asia				
22. Roll out of mobile based monitoring in South Asia.	Green	Green	Green	→
23. Activating local reporting in South Asia.	Red	Red	Orange	↑
South East Asia				
24. Roll out of mobile based monitoring in South East Asia.	Green	Green	Green	→
25. Activating local reporting in South East Asia.	Red	Red	Green	↑
Communication and outreach				
26. Increased Akvo outreach to partners.	Green	Green	Green	→
27. Strengthened internal collaboration and communication.	Green	Green	Green	→

We have the following comments on these reported results:

1. We note that no objectives or result indicators have been set under the PPP for the contribution of MFA. The application of the form of a PPP implies that both Akvo and MFA make a contribution to the partnership, and the contribution of the MFA is more than just a financial contribution to Akvo's activities. However, as no result indicators or objectives have been described for MFA's contribution, MFA's performance on its contribution to the PPP cannot be assessed. We will return to this point in chapters 4 and 5.
2. Akvo has indicated that, in retrospect, it considers the set of results indicators unbalanced and skewed towards the development and application of RSR in bringing online monitoring information on portfolios of IGG-funded projects. In particular, the partnership perspective (27indicators out of 75 in Akvo's proposal for PPP3, just 1 indicator out of 27 in its annual reports) is underrepresented, while the product perspective (16 indicators in Akvo's proposal for PPP3, 13 indicators in its annual reports) is overrepresented. This means that also the traffic light indicators for all results together may give an unbalanced view.
3. Indicators about bringing the IGG and Embassy portfolios online are mostly quantitative in nature. They are focused on the percentage of each portfolio that is published online, without assessing a) the quality of the data published online or b) the approval of the owners of those data. In our interviews it has for instance become clear that the data published for the Netherlands Embassy in Nairobi were entered into Akvo RSR by an intern and were not allowed to be published online according to MFA internal policies. This example caused concern within MFA and resulted in hesitation in other parts of the ministry to contribute to publishing of data online. Similar experiences are echoed by NGOs in our case studies, who indicate that it is important to them to audit data from decentralised projects before they are put online. These concerns are not reflected in Akvo's result indicators and not included in its narrative reports.

3.2. Akvo's contribution to improved WASH service delivery to the poor

The assessments made in the case studies of Akvo's contribution to improved WASH service delivery are presented in the table below. We note here that some cases focus on a specific project in which Akvo cooperated with the partner, while in other cases, a broader cooperation is described. This shows that the nature of the cooperation between Akvo and its partners may differ from one partner to another and is tailored to the partners' individual needs.

Case	Tool(s) used	Assessment of Akvo's contribution to improved WASH service delivery	Score (on a scale of * to *****)[1]
Cardno	Flow	Ensured accurate targeting of the right end users for a large-scale household connection project	****
Burkina Faso – National mapping	Flow	Project not yet started	N/A
Burkina Faso – Tipaalga	Flow	Flow surveys used to collect reliable data to report to funders, helping to ensure the financing of the intervention	***
Burkina Faso – SNV	Flow, CaddisFly	• Helps to visualize maps, which makes communication with local partners, end users and donors more efficient • Helps transparency • No direct contribution to WASH service delivery	*
ICCO	Flow, RSR	• Flow maps help to convince local governments to support projects (which could indirectly imply reaching groups of beneficiaries that would otherwise not be reached) • Data are not (yet) used by ICCO as a basis for targeting or decision making	***
National mapping Mali	Flow, RSR, CaddisFly	Mapped the functional status some 40,000 water points, allowing for targeted maintenance in the future. However, it is as yet unsure whether the Malian government can mobilise sufficient financial means to make the required investments.	****
Aqua for All	RSR	No indications of improved service delivery	*
Plan Finland	RSR	Data are not used by Plan as a basis for targeting or decision making	*
Cordaid	RSR, now discontinued	Cordaid has discontinued its use of RSR	*
Netherlands Enterprise Agency (RVO)	None, but considered RSR	RVO has given preference to another supplier of IATI compliance and data visualization software	*

The case studies show that the use of Akvo Flow in some cases makes a contribution to improved WASH service delivery to the poor. Although via Akvo Flow the functional state of WASH facilities and services can be monitored easily over time, this is not something that the case studies show as of now. In fact, the actual impact on WASH service delivery to the poor cannot be seen within the timespan of the PPP3 or shortly after it, but may be seen at a later stage.

Nevertheless, we do observe in some cases that the use of Flow in particular helps to ensure that the right beneficiaries are targeted by WASH projects (e.g. Cardno) and that interventions can be targeted to improve the infrastructure that most requires it (Mali water point mapping). In the Mali case, there are concerns that while the data are now available, other components for more effective WASH service delivery, such as sufficient financial means to make the investments required, are not yet visible.

[1] With respect to the score scale * indicates no visible effect and ***** indicates a very strong positive effect.

The use of RSR does not support improved service delivery, as all partners we interviewed that use(d) RSR have indicated the main aim of using the tool is either increasing their transparency to stakeholders or complying with IATI standards, or both.

3.3. Akvo's contribution to sustainability of WASH services

The assessments made in the case studies of Akvo's contribution to sustainability of WASH services are presented in the table below.

Case	Tool(s) used	Assessment of Akvo's contribution to sustainability of WASH services	Score (on a scale of * to *****)[2]
Cardno	Flow	Flow was used for a baseline survey, which was meant to properly target the intervention. The data is shared with the Indonesian government, Indonesian Infrastructure initiative, local governments and PDAM's (water authorities). The data can be used for monitoring and for new projects. However, to date there are no concrete plans for monitoring or new projects.	***
Mali	Flow	The long-term result of the mapping of water points could be that on-going monitoring and real-time feedback by users are made possible in the future, allowing for a demand-driven, responsive approach to maintenance of water infrastructure. However, to date there are no concrete plans to implement these longer-term solutions.	***
Burkina Faso – National mapping	Flow	Project not yet started	N/A
Burkina Faso – SNV	Flow	Helps to visualize maps, which makes communication with local partners, end users and donors more efficient. This could lead to better understanding and upkeep of project results, but this is not a given.	***
Burkina Faso – Tipaalga	Flow	The project teaches skills that will help ensure sustainability. However, the use of Flow does not influence these skills.	*
ICCO	Flow, RSR	ICCO is working on linking SCOPE, a tool that measures business capabilities of farmer cooperatives, to Flow datasets including measures of food insecurity. Hard data are not available yet, but this is work in progress and could lead to improved sustainability in targeted communities.	***
Aqua for All	RSR	No indications of improved sustainability of services	*
Plan Finland	RSR	No indications of improved sustainability of services	*
Cordaid	RSR, now discontinued	Cordaid has discontinued its use of RSR	*
Netherlands Enterprise Agency (RVO)	None, but considered RSR	RVO has given preference to another supplier of IATI compliance and data visualization software	*

The case studies show that the use of Akvo tools does not contribute to sustainability of WASH services within the timespan of PPP3. The impact of Akvo tools on sustainability of WASH services is not yet visible and can only be observed at a later stage. In all of the cases, either significant additional investments are required or sustainability is dependent on new initiatives taken by Akvo's partners or project end users, or both.

[2] With respect to the score scale * indicates no visible effect and ***** indicates a very strong positive effect.

Like the contribution of the use of Akvo tools to improved WASH service delivery to the poor, the contribution of sustainability does not occur at all due to the use of RSR. Again, the use of this tool is mainly aimed by partners at increasing their transparency to stakeholders and/or complying with IATI standards.

3.4. Contribution of RSR to IATI compliance

As discussed in the two paragraphs above and demonstrated in the case studies in appendix A, RSR is primarily used to either increase transparency to stakeholders or to comply with IATI standards, or both. The table below shows that all RSR users we interviewed want to comply with IATI. However, while some have chosen to use RSR for this, others (Cordaid, ICCO and RVO) have found that other solutions are possible for complying with IATI requirements.

Case	Extent to which use of IATI enables partner to comply with (DGIS's) IATI requirements	Score (on a scale of * to *****)[3]
Aqua for All	Oldest user of RSR, 170 projects online	*****
Cordaid	Cordaid has discontinued its use of RSR by the end of 2016. Started to use RSR in 2011 in order to comply with IATI, and saw great added value of RSR in the 2011-2014 period. Since 2011, Cordaid has also been building up its own IT-capabilities and developed its own infrastructure to publish IATI-compliant data.	***
ICCO	ICCO uses RSR primarily for the updates feature, manages IATI compliance with its own tool.	*
Netherlands Enterprise Agency (RVO)	RVO has given preference to another supplier of IATI compliance and data visualization software	*
Plan Finland	Plan Finland is not required to comply with IATI, as this is not compulsory in Finland. It has however seen the benefits for transparency and worked with RSR since 2015. Plan Finland uses most RSR features and delivers RSR-generated reports to its main donor, the Finnish Ministry of Foreign Affairs.	*****

From our interviews we gather that RSR (non-)users see three main strategies for complying with IATI:

- using or developing in-house IT capability that can ensure tools are delivered that are compliant with the IATI standard;
- using Akvo RSR as a "turn-key solution";
- making use of freely available tools, such as Aidstream.

The above implies that alternatives are available to the use of RSR when it comes to IATI compliance. One interviewee has commented: "Back in 2011, when no-one knew how to comply with IATI, Akvo was the first to provide a working, user-friendly solution. However, since 2014, their tool is far from unique and many alternatives are available." When it comes to selecting a solution, our interviewees have mentioned several benefits and downsides of using RSR to comply with IATI:

Benefits	Downsides
RSR is very user-friendly, does not require advanced understanding of IT	Akvo has added fields to the IATI structure that deviate from the standard structure. This hampers aggregation of data at MFA portfolio level.
Akvo provides high-quality support in using RSR, but also in making use of the data collected, for example in analyses, which create value for the organisations using RSR. This allows the collection of project data to go beyond a compliance exercise.	Expectations to edit data once it has been published in RSR differ between Akvo and some partners .
	Compared to alternatives for publishing data to IATI, RSR is quite expensive.

[3] With respect to the score scale * indicates no visible effect and ***** indicates a very strong positive effect.

The available alternatives, combined with the relative benefits and downsides of using RSR for IATI compliance, mean that for some organisations, RSR provides a high-quality solution at a reasonable price, while other organisations have other preferences and find another tool more fitting to their needs. In addition, according to Akvo most users of RSR do not have IATI compatibility and publication as their main objective. It is our assessment that in the PPP3 period RSR was no longer the only solution for organisations that focus specifically on complying with IATI.

3.5. The scope of information in Akvopedia

Akvo has reported the following results on Akvopedia in its final report on PPP3:

Product development: Akvopedia

1. Akvopedia software is continuously improved, source code is shared online and documented with an open license.	96%	
2. Increased accessibility and knowledge of Akvopedia in the WASH sector	311%	
3. Increased availability of WASH technology and solutions online.	431%	
4. Users can access Akvopedia via phone app	100%	

With regard to the scope of information in Akvopedia, the following sub-indicators reported by Akvo are relevant[4]:

Sub-indicator no.	Description	Baseline	Target	Result	% Result[5]
Akvopedia – 2A	Number of articles in Akvopedia	1,146	1,250	1,954	777%
Akvopedia – 2B	Number of new WASH portals introduced	3	10	9	86%
Akvopedia – 4A	Number of visits	851,742	1,200,000	1,934,895	311%
Product integration – 1A	Number of RSR projects linked to Akvopedia articles	0	200	141	71%

Sub-indicator 2A shows that the number of articles (contributed by users) in Akvopedia has increased much more than the target. The number of new WASH portals introduced by Akvo in cooperation with several of its partners and the number of RSR projects linked to Akvopedia articles have partly met the target set for PPP3. These results imply that the scope of the content in Akvopedia has significantly broadened during PPP3.

The number of visits to Akvopedia also increased significantly beyond the PPP3 target. This indicates appreciation from users on the content presented on Akvopedia.

Taken together, these findings are a good indication of appreciation of users for the scope of information on Akvopedia.

[4] Akvo (2017), *DGIS - Akvo PPP (2014-2017), Final report; 1 January 2016 - 31 March 2017*, pages 7, 8 and 22.
[5] The result as a percentage has been calculated by Akvo as the difference between the result and the baseline, divided by the difference between the target and the baseline.

4. Efficiency

In this chapter we present:

- our assessment of the efficiency of software development by Akvo (4.1.):
  - Akvo's approach to open-source software (4.1.1);
  - effectiveness in relation to the goals of the PPP (4.1.2);
  - efficiency in terms of software development (4.1.3);
  - effectiveness in relation to the users of the products (fit-for-purpose) (4.1.4); and
- other observations regarding the efficiency of PPP3 (4.2.).

4.1. Efficiency of software development by Akvo

One of the conclusions of the case study on Akvo as part of the Schokland fund evaluation was: "Akvo is well on track to become fully sustainable. The costs of its operations are covered by the fees for services and products of Akvo. For new product development and special projects Akvo acquires funding. The partnership with MoFA is very instrumental in this." This quote shows that MFA's financial support in the third phase of the PPP would be best directed to software development. On the side of Akvo, this presents the responsibility to conduct an efficient software development process.

4.1.1. Akvo's approach to open-source software

Akvo operates using a clear business philosophy with regard to its not-for-profit products and services. The software is paid for by the users and this creates a source of revenue to sustain the organisation needed for complex software development. Akvo indicates that larger partners pay for services provide and then give access to others at no cost. Akvo aims to have a sustainable service model but does not use proprietary software to create reliance on Akvo. Akvo's vision and position is published on its website in an article and whitepaper[6]. The software is freely available online which "grants anybody the right to study, change and distribute the software for free to anyone and for any purpose"[7]. This is formalised by releasing software under open source, open content and open data licenses. Akvo adheres to the definition of open source set out on https://opensource.org/docs/osd. The software and the source code are indeed freely available on Github under an Open Source license[8].

So is independent use of Akvo products a realistic option? Since all the code is freely available this is certainly the case from a technical perspective. But doing so will require a level of technical expertise and manpower. In practice independent use will requires an IT organisation with software developers and IT operations engineers who can install, manage and maintain complex IT applications.

Akvo's IT organisation can be considered efficient (see paragraph 4.1.3) and therefore it would only make sense from a cost perspective to do so when an end-user can deliver an equivalent service at lower cost. The customers (partners) of Akvo are generally not willing or able to do so. This is in line with market trends where commercial companies move to software-as-a-service (SaaS) vendors, since they have economies of scale. Also customisation of software deviates from best practices and this leads to higher cost. With the use of SaaS the amount of customisation is very limited with regard to in-house built applications. Only organisations that have more economies of scale or an even more efficient IT organisation will have the leverage to use the products fully independently at a lower cost level.

Apart from the cost perspective the security and privacy aspects of cloud-based software are also to be considered. Individual users will not be able to provide the same service level as Akvo. It is technically possible to run e.g. RSR from a basement with self-managed IT resources but this would lead to lower quality of service.

[6] http://akvo.org/blog/open-data-content-and-software-at-akvo
[7] Quote derived from 'Akvo software PwC v3' elaborating Akvo's viewpoint.
[8] Flow, RSR, Lumen are licensed under the GNU Affero General Public License, Version 3.

4.1.2. *Effectiveness in relation to the goals of the PPP*

The contract underpinning the PPP phase 3 contains high-level goals with regards to the software development process. The main goal as specified[9] in the contract is:

> *"Further development, demonstration and integration of the existing software products (Akvopedia, Akvo Really Simple Reporting (RSR), Akvo FLOW and Akvo Open Aid), and the further development of the new Akvo Dash for open source data management, visualization and analysis is (IATI compliant)."*

The use of open-source software is an important part of the contract and this is elaborated as such:

> *"Akvo will develop open-source software and release this under an open-source license. Akvo will use standard data formats that will enable data exchange with other parties. Akvo will periodically provide updates of the products at no additional cost. All Akvo software will be able to run independent of other software."*

To track progress and monitor results annual reports are produced by Akvo. They contain more detailed KPIs for the whole partnership and also for the software development. These yearly reports specify that *"software is continuously improved, source code is shared online and documented with an open license."*

Based on these goals we have defined the following four aspects to guide the software development assessment.

1. effectiveness in relation to the goals of the PPP;
2. effectiveness and efficiency in terms of software development;
3. effectiveness in relation to the users of the products (the extent to which the software is fit-for-purpose);
4. compliance with Open Source standards and availability of the code.

We have reviewed the software development process at Akvo in order to assess the effectiveness in relation to these four goals and software development assessment is structured according to these aspects.

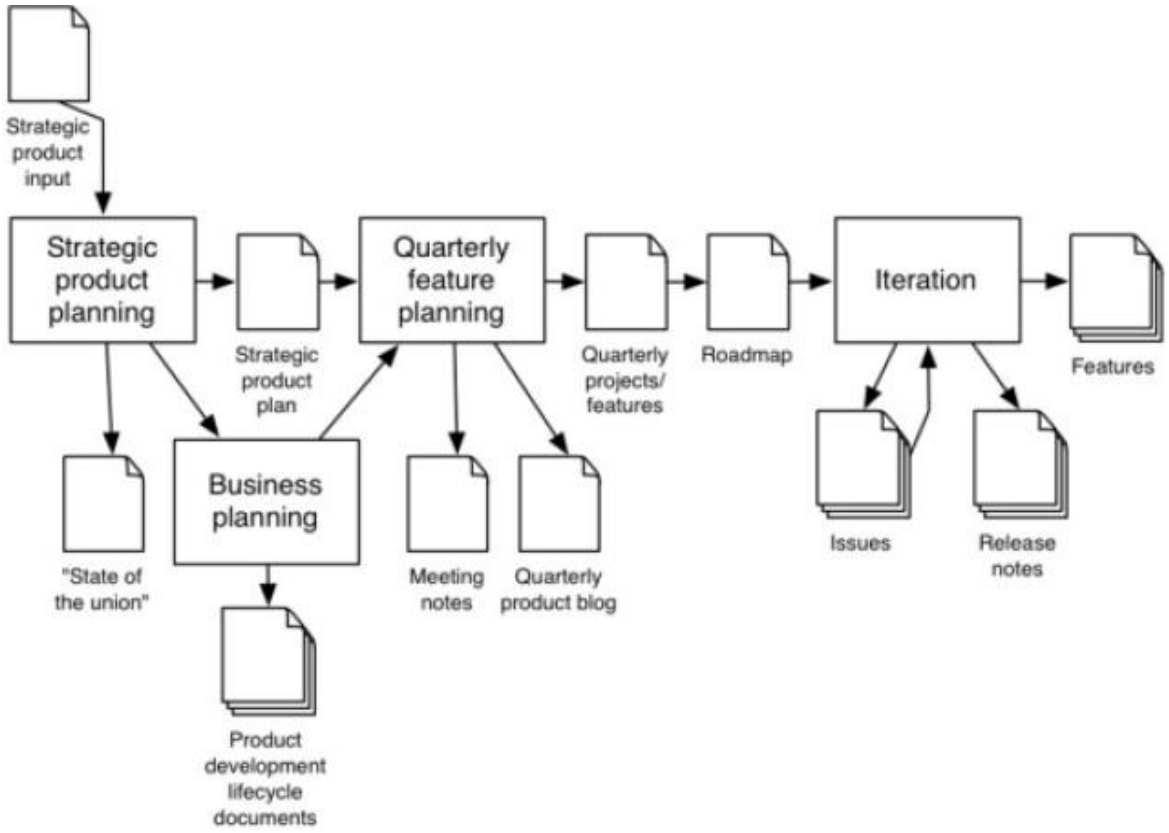
The software developed by Akvo is the foundation of the activities by Akvo. The current processes have enabled Akvo to develop, maintain, support and update its products consistently. The high-level goals as defined in the governing contract are tracked in more detail in the annual progress reports and these contain 27 KPIs. The KPIs that relate to software development are the KPIs numbered 1 to 13 (see table on page 11).

Based on these progress reviews the overall progress has the status 'green', which implies its objectives have been achieved (almost) completely[10]. As observed in paragraph 2.3.1, the KPIs are not formulated in objectively measureable terms (SMART). We see no reason to dispute the progress reported by Akvo, but the lack of clearly defined KPIs limits the depth of the assessment. We advise any future KPIs to be more balanced in terms of quantitative and qualitative terms, since the current form is mostly qualitative.

4.1.3. *Efficiency in terms of software development*

The software development effectiveness and efficiency is determined by the effort needed to reach a result (efficiency) and the measure in which the effort produces the desired result (effectiveness). The software development process is visualized in the process flow below.

[9] Source: "22961 - AKVO - 2014 - BEMO -FASE 3" and translated from Dutch to English.
[10] No independent review of the progress reporting was performed for the purpose of this assessment.



The software development efficiency is hard to objectively measure, since the outcome of software (the actual working software) is not easily measured in size or value and the goals of the PPP are primarily expressed in qualitative terms. Therefore we focus on approximations of efficiency, answering the question “Does Akvo use modern software development practices?”.

We have found that the software development process is organised using modern development methodology (lean/agile software development) and the use of a DevOps organisational model (integration of development and operations in a single team/person). Akvo has implemented automation (automated testing and IT infrastructure management) to make the repetitive steps of software development and maintenance more efficient. Especially the use of continuous integration and continuous delivery[11] indicates an advanced delivery model that is aimed at efficiency.

The entire engineering and design team consists of 20 people. This team builds and supports a SaaS offering that contains aspects of a mature offering like back-up and restore policies, disaster recovery, intrusion security and privacy protection. These are all aspects that can be expected from a professional service provider and Akvo is actively managing these aspects which indicates an efficient software development process.

4.1.4. Effectiveness in relation to the users of the products (fit-for-purpose)

Has the software resulted in the desired outcome for its target audience? Arguably the development has been effective in delivering the software, since Akvo has a portfolio of software products that is available on the commercial market and is being used. Defining the desired outcome for the target audience is somewhat complicated by the nature of SaaS or cloud-based-software. This type of software is not installed on a local computer, but rather accessed by the a browser. A key difference with regard to ‘traditional software’ is that this type of software is not customised to individual users needs and requirements and therefore there is no user acceptance phase. Instead, updates are rolled out to the user community.

[11] Continuous Integration is the technical practice of (daily) integration of code in a shared repository and this ensures there is a working product at all times and defects are found early. Continuous Delivery is the practice of automatic testing, validation and deployment of code after integration.

Akvo deliberately does not build specific features for individual users, in order to serve a large audience. The product portfolio is guided by a long-term vision, which is detailed in mid and short-term development actions by the head of product development and individual product managers. To ensure the software is fit-for-purpose Akvo uses the following methods:

- ***Long-term product vision*** — the vision of Akvo on what the main focus of a product should be, and particularly what the boundaries of a product should be.
- ***Advisory committees*** — These are organised at the product level with groups of 'key users', who meet on a quarterly basis.
- ***Feedback from product training*** – The feedback from individual users of the software comes trainers and hubs where users are observed during training sessions.
- ***Structured user testing*** — Users are asked to perform a specific task and observed when executing these.
- ***Unstructured feedback*** – This is gained from Akvo's support organisation and the statistics that are gathered from the support desk and helpdesk systems.
- ***User personas*** – These are archetypical users that represent groups of users that use the software.

Without a clear functional purpose statement in the PPP, we cannot assess if Akvo's software is fit-for-purpose from that perspective. The development process has produced working software that exhibits the traits expected from professionally developed and managed software. In this respect we consider it fit-for-purpose.

4.2. Other observations regarding the efficiency of PPP3

No formal assessment of the efficiency of the third phase of the PPP has been made, as this was not part of the scope of the evaluation. It would require assessing the output of Akvo's activities in terms of results achieved and the funds used to achieve these results against an objective norm or benchmark. Such a norm is not available in the context of this evaluation.

We make a more qualitative assessment of efficiency, by taking inventory of factors that we identified in our work with Akvo and its partners, which increase or decrease the efficiency of the PPP. In this regard, we have identified the following.

Factors increasing PPP efficiency	Factors decreasing PPP efficiency
Akvo had a good track record delivering the tools whose development MFA intends to support at the start of PPP3. This included an existing software development team and approach, as well as existing versions of several key tools (Flow, RSR) that were targeted for further development.	Limited guidance from MFA with regard to Akvo's communication with Embassies and limited information to the Embassies about their options for bringing water project portfolios online in an IATI-compliant manner appear to have resulted in some inefficiencies in the time spent by Akvo on interaction with the Embassies and their local partners.
Clear results were defined for Akvo to achieve, which has helped to focus its activities under the PPP.	The label 'PPP' has caused confusion within MFA's own organisation. One example is that MFA's WASH teams at embassies are unsure how to go about publishing their portfolio online given the fact that there is a PPP with Akvo. They have questions such as "Can we contact Akvo directly to come in and implement an IATI-compliant tool for publishing our portfolio online, or should we go through MFA in The Hague?", "Do we have to use Akvo tools because of the PPP, or can we also contract with another supplier?" and "Does the PPP mean that any support for publishing the portfolio online has been paid for as part of the PPP, or do we need to reserve budget for this?"
	The PPP has also given rise to criticism, as some interviewees have argued that the label 'PPP' in this case means little more than financial support to Akvo, whereas a PPP in the strict sense would require a material contribution from MFA leading to joint development of software between MFA and Akvo. This can also be seen in paragraph 3.1 of this report, where we have shown that no targets have been set for MFA's contribution to the PPP other than the amount of funding to be provided.

5. Conclusions and recommendations

In this chapter we present:

- our conclusions from the evaluation (paragraph 5.1); and
- our recommendations to MFA (5.2).

5.1. Conclusions

5.1.1. Results reported by Akvo show most results of PPP3 achieved

Based on Akvo's own result indicators, most results of PPP3 have been achieved. Notable result indicators for which the targets were not achieved are in the areas of:

- development of a write API for Akvo Flow (which was however completed shortly after the PPP);
- development of Akvo Opencast;
- bringing the IGG Water portfolio online with RSR. This has been explained in the Akvo deliverables report of 2015: "the process of visualising the DGIS WASH portfolio was put on hold in order for DGIS to internally align expectations. As a result, the objective of the DGIS WASH portfolio pilot shifted towards a more sustainable approach on IATI reporting, as opposed to visualising every IGG Water programme online in RSR".

We have the following comments on these reported results:

- We note that no objectives or result indicators have been set under the PPP for the contribution of MFA. As a result, MFA's performance on its contribution to the PPP cannot be assessed.
- In the PPP3 results indicators the partnership perspective is underrepresented, while the product perspective is overrepresented. This means that also the traffic light indicators for all results together may give an unbalanced view.
- Indicators about bringing the IGG and Embassy portfolios online are mostly quantitative in nature. They thus do not provide insight into whether stakeholders are happy with the way their projects are published.

5.1.2. Akvo Flow can help create conditions for optimal targeting of beneficiaries, but Akvo tools do not contribute directly to improved WASH service delivery within the time span of PPP3

The use of Akvo tools has not contributed directly to improved WASH service delivery to the poor within the time span of PPP3. In some cases, the use of Flow in particular helps to ensure that the right beneficiaries are targeted by WASH projects (e.g. Cardno) and interventions can be targeted to improve the infrastructure that most requires it (Mali water point mapping). This makes Flow particularly of added value to governments of developing countries. International NGOs are often capable of conducting such targeting on their own. However, we have not seen examples where Flow has made a difference directly to the effectiveness of a project implemented by a partner.

The use of RSR does not support improved service delivery.

5.1.3. The use of Akvo tools does not contribute to sustainability of WASH services within the timespan of PPP3

The case studies show no examples of the use of Akvo tools contributing to sustainability of WASH services. Although via Akvo Flow the functionality of WASH facilities can be monitored easily over time, this is not something that we see occurring yet. In fact, the impact of Akvo tools on sustainability of WASH services cannot be observed within the timespan of PPP3, but will be visible at a later stage. Besides, in all of the cases, either significant additional investments are required or sustainability is dependent on new initiatives taken by Akvo's partners or project end users, or both.

5.1.4. Akvo made a contribution to IATI compliance before and during PPP3, alternative solutions are available

In the years leading up to PPP3, Akvo RSR made a significant contribution to enabling IATI compliance by development partners, as it developed the technical solutions that allow data to be reported in an IATI-compliant manner. However, it was only during PPP3 (in 2015) that it released an RSR update that allows development partners to publish their own data using RSR.

Today, and already since 2014, alternative solutions are available on the market to allow organisations involved in WASH service delivery to comply with IATI without the need to support Akvo. In this sense, support to RSR activities has been somewhat redundant. Akvo has contributed by informing a number of partners about IATI and offering its solutions to comply with the standard, but this information has focused on Akvo solutions only and does not give equal insight into the full range of software options available in the market.

5.1.5. The scope of information in Akvopedia has been significantly broadened during PPP3

The increase of the number of articles (contributed by users) in Akvopedia and of new WASH portals introduced by Akvo in cooperation with several of its partners imply that the scope of the content in Akvopedia has significantly broadened during PPP3. The number of visits to Akvopedia also increased significantly beyond the PPP3 target. This indicates appreciation from users on the content presented on Akvopedia. Taken together, these findings are a good indication of appreciation of users for the scope of information on Akvopedia.

5.1.6. Akvo's software development process follows modern standards and is considered efficient

Based on Akvo's own progress reviews the overall progress has the status 'green', which implies its objectives have been achieved (almost) completely. The KPIs are however not formulated in objectively measureable terms (SMART). Without a clear functional purpose statement in the PPP, we cannot assess if Akvo's software is fit-for-purpose from that perspective.

Akvo's team builds and supports a SaaS offering that contains aspects of a mature offering like back-up and restore policies, disaster recovery, intrusion security and privacy protection. These are all aspects that can be expected from a professional service provider and Akvo is actively managing these aspects which indicates an efficient software development process.

We consider Akvo's IT organisation to be efficient. The software development process is organised using modern development methodology and a DevOps organisational model. Akvo has implemented automation to make the repetitive steps of software development and maintenance more efficient. Especially the use of continuous integration and continuous delivery[12] indicates an advanced delivery model aimed at efficiency.

[12] Continuous Integration is the technical practice of (daily) integration of code in a shared repository and this ensures there is a working product at all times and defects are found early. Continuous Delivery is the practice of automatic testing, validation and deployment of code after integration.

5.1.7. Some observations show that efficiency of PPP3 from a funder's perspective could have been better

No integral efficiency assessment of PPP3 as a whole was conducted. Observations of factors increasing and decreasing efficiency of the PPP show that efficiency may have been somewhat limited by factors that MFA could have influenced. Particularly when it came to bringing the Embassy portfolios online, MFA could have made different choices that would have increased the efficiency from a funder's perspective. Limited guidance from MFA with regard to Akvo's communication with Embassies and limited information to the Embassies about their options for bringing water project portfolios online in an IATI-compliant manner appear to have resulted in some inefficiencies in the time spent by Akvo on interaction with the Embassies and their local partners. If IGG would have proactively guided this interaction by instructing Akvo and informing the Embassies in more detail in advance, these inefficiencies could have been prevented.

5.2. Recommendations

Based on our findings, we make the following recommendations to MFA.

5.2.1. Carefully assess the added value of continued co-funding of Akvo activities

The evaluation of the Schokland Agreements concluded on PPP1 that Akvo was almost financially sustainable at the end of that first phase. This means that MFA's continued financial support for Akvo in phases 2 and 3 of the PPP has a high risk of disrupting the level playing-field in the market for services similar to those provided by Akvo. Furthermore, the case studies show that Akvo's niche is in providing the tooling and services to partners who prefer a user-friendly, full-service solution without being required to develop or manage IT in-house. While some large organisations have become more IT-savvy in recent years, other, most often smaller, organisations decided not to run more software in-house, but move to online solutions. The organisations that do not have the capacity and knowledge on how to use data effectively are looking for both tools and services to support their activities. With development partners having become more IT-savvy in recent years, the group of organisations that benefit most from Akvo's tools and services is shrinking as a proportion of all development organisations.

We therefore caution MFA to continue co-funding Akvo's activities without a careful assessment of where such co-funding would add value and for which group of users.

5.2.2. Limit future support to the development of tools whose functionality will add to effectiveness and sustainability of development projects

It is evident from our findings that the added value of RSR to IATI compliance is no longer unique; good, and sometimes cheaper, alternatives exist. Further financial support to RSR development will likely distort the level playing field for competition. Furthermore, we have shown that RSR does not contribute to effectiveness or sustainability of WASH service delivery. Flow's contribution in this regard is limited to supporting optimal targeting of development resources, particularly by governments of developing countries.

As a result, any future government support to Akvo should focus on tools that can reasonably be expected to add to the effectiveness and sustainability of development projects and/or targeted capacity building. The group of potential users is not necessarily limited to organisations implementing WASH projects, but it should be evident that future support to Akvo has a likelihood of enabling those organisations in more effective and sustainable service delivery.

5.2.3. Recommendations on software development

The goals of the PPP are not specific with regard to Akvo's software development activities. We advise to either make these more specific or to explicitly remove this from the KPIs and allow Akvo to develop according to their vision and the needs of their stakeholders, economic buyers and users. If the chosen direction is to be more specific, we advise to focus on the output of the software development process, i.e. the products and features developed.

Akvo adheres to open-source standards and releases its software under public licenses. The intent of the PPP in regard to open source is not clear. We advise to take a clear position on this subject. Does it suffice to make the software public or should the software be useable for individual users without Akvo's support? Since Akvo develops cloud-based software this would be quite difficult to achieve.

The supporting documentation provided on Github is rather sparse. The basic installation instructions are provided but not much more. Since the real world cases of users using Akvo's software independently are also rare this is not a problem and investing in supporting documentation that is not used is actually a form of waste. But if the intent is to enable organisations to use the software independently, the current documentation does not contribute to that objective.

5.2.4. In future cooperations MFA should define proper and adequate objectives, results, indicators and targets

The objectives set for PPP3 are not SMART, and were translated into desired results by Akvo and MFA at the start of the PPP because these results would provide more meaningful insight into the achievements of the PPP. For each result, indicators were set with targets per indicator. As our discussion of the results reported in the PPP3 final report shows, the results measured were not a balanced representation of Akvo's achievements, were not sufficiently SMART for all of them to be objectively assessed and had indicators that were not balanced in terms of quantitative and qualitative measurements. Also, the targets on multiple indicators were adjusted in the course of the PPP, when they turned out not to be attainable within the PPP3 period. Finally, no objectives, results, indicators or targets were defined to capture MFA's contribution to the PPP. As a result, assessing MFA's role in the PPP cannot be evaluated.

For future cooperations with external partners, we recommend that more effort is made by MFA to set technically sound (i.e., SMART) objectives and results, and define appropriate indicators to measure them, with relevant and attainable targets. Having experienced the challenge of setting proper objectives, results, indicators and targets in PPP3, Akvo has hired a monitoring & evaluation specialist and started to develop its own theory of change. MFA should similarly invest time and effort in getting the right objectives and measurements in place in future projects and programmes. In the case of any future PPP, in which it is assumed that MFA itself makes a substantial material contribution (i.e., performs actual activities, in addition to merely funding them), setting appropriate objectives, results, indicators and targets applies to MFA's contribution equally.

A. Case Studies

A.1. Case study approach

The purpose of the case studies is to identify multiple examples of how Akvo makes a contribution to the effectiveness and sustainability of its partners' WASH projects. The case studies were selected with the aim of covering a good representation of various Akvo partners. The partners featured in the case studies include national governments of developing countries, Dutch NGO partners based in the Netherlands as well as in developing countries, one NGO from another EU country, local NGOs and a private-sector consultant. The case studies rely on the following data sources:

- an interview with the partner concerned – in case of multiple partners, we aimed to interview at least two;[13]
- an interview with the responsible Akvo team member, to incorporate Akvo's view in our understanding of the case[14];
- the contract between Akvo and the partner, if available to us;
- other relevant documentation, such as information available online;
- in the case of the Tipaalga (see section A.2.3.3 in this appendix) a field visit was conducted to the project site where the use of an Akvo Flow survey was observed *in vivo*.

For each case study, we provide a case study report according to the following structure:

- Short introduction of the relevant partner organisation(s)
- Background of partnership
- Which Akvo tools does the partner use?
- To what extent and how have Akvo tools contributed towards improved service delivery to the poor?
- Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?
- Other findings regarding the cooperation
- Conclusion and areas for improvement

[13] For each case study, all targeted partners were interviewed, with the notable exception of Direction Nationale de l'Hydraulique du Mali (DNH), Mali's central government water directorate. Multiple contact persons suggested by Akvo were approached multiple times via both e-mail and telephone, but did not respond, even after Akvo attempted to contact them on our behalf. For the Mali national mapping case study we were able to interview a representative of KfW, the German development bank that supported the project and worked with DNH and Akvo.

[14] For the case study on RVO, Akvo was not interviewed, as this concerned a public tendering procedure, in which RVO made its decision to award the tender unilaterally based on the bids it had received from Akvo and several competing organisations. This is the only case study for which Akvo was not interviewed.

A.2. Case studies of projects conducted for national governments, together with partners

A.2.1. Cardno's baseline survey for the Water and Sanitation Hibah and the Indonesia Infrastructure Initiative programme

Cardno is an Australian consultancy firm active in infrastructure and environmental services. Cardno won the project to conduct a baseline as part of the Water and Sanitation Hibah and the Indonesia Infrastructure Initiative (IndII) programme, funded by the Australian Government. The aim of the programme is to increase access to clean water for low income people in urban regions in Eastern Indonesia, hence contributing to achieving the water sector Millennium Development Goals.

Background of partnership

Cardno and Akvo started a partnership in 2013 in order to introduce Akvo Flow as the monitoring and mobile based data collection system for the baseline conducted by Cardno in Eastern Indonesia. The scope of the project is 270,000 new water connections and maintenance of already existing connections. The programme is unique due to its scale, and the fact that it is output-based funding. The latter implies that the Indonesian government receives funding only based on demonstrated programme results.

Which Akvo tools does the partner use?

Cardno used Akvo Flow to conduct the baseline survey. The electricity use of households in urban regions in Eastern Indonesia was measured as a proxy of poverty, hence identifying the people most in need of access to clean water supply. Flow was also used to conduct an end-line verifications survey. About 600,000 socio-economic surveys were conducted with Flow on mobile phones, which makes this project Akvo's largest Flow project.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Before the project started, about 60,000 water connections were available. Data on these connections were very poor, and half of the connections could not be confirmed. Based on the baseline it was determined where the new water connections should be built. As a result 270,000 water connections have been built and mapped. The impact of the project has been huge, specifically on the poor, as 500,000 people have been connected to the water system. The Flow survey allowed the Indonesian government to target specifically the poorest people, who cannot afford to pay for a water connection from their own household income. Thus the targeting of the intervention was optimized due to the use of Flow.

A major advantage of Flow according to Cardno is that no internet connection is needed to log information during the data collection, as the data are uploaded to the Akvo cloud internet access is required. Moreover, Flow also enables to monitor the enumerators in the field as the collection of data is linked to the identity of the enumerator and data points logged are connected to the GPS location of the phone at the time of entry. Thus enumerators can receive guidance in conducting surveys in the field and data entry fraud (e.g. enumerators entering fictional data on multiple households while sitting in a static location) can be detected. These features increase the reliability of the survey data and therefore add to the accuracy of the targeting described in the paragraph above.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

The data collected through the socio-economic surveys is shared with the Indonesian government, Indonesian Infrastructure initiative, local governments and PDAM's (water authorities). As a result the data can be used for monitoring and for maintenance of the water connections, as well as for answering other important research questions.

However, as for now there are no concrete plans to use the data for other projects. While Akvo hopes that the data will also be used in multiple sectors, it is up to the Indonesian government, Indonesian Infrastructure initiative, local governments and the water authorities to initiate new projects. As a commercial consultancy

firm Cardno has not much attention for the sustainability of the data and will most probably not initiate any new projects by itself to use the collected data for other means.

The data can potentially be used for maintenance of the infrastructure delivered in the project, but thus far little time has passed since the completion of the project and thus the sustainability in targeted communities is yet limited. As of now there are no concrete plans to use the surveys for other project

Other findings regarding the cooperation

Cardno is very positive about the cooperation with Akvo. A key benefit of working with Akvo is that the Cardno core team for the project was very thoroughly trained by the Akvo team, thus allowing them to function effectively as a first line of support to the survey enumerators in the field. Only if the Cardno team could not handle issues, Akvo was asked to step in. This ensured Cardno's control of the survey and made the cooperation efficient for them in the long run, even though a significant investment was required upfront.

Even though some issues occurred e.g. not anticipated update of software, Akvo has always been very supportive and thus Cardno mentioned it would like to work with Akvo in the future again, if an opportunity should present itself.

PPP funding was used to develop additional features in Akvo Flow to allow for the large scale of this survey. Considering that the project was a success from both Akvo's and Cardno's perspective and the large scale application of Flow has been repeated in disaster recovery settings in the Pacific, the PPP funding can be considered to have been spent efficiently in this case.

Conclusion and areas for improvement

Overall, the project has been perceived as a great success by both Cardno and Akvo, but also by the Indonesian government. It has been the largest Flow project of Akvo, making significant impact on especially lower income people in regions in Eastern Indonesia. Building on the project data 270,000 water connections have been built and mapped, and 500,000 people have been connected to clean water. While Flow has significantly contributed towards improved service delivery to the poor in this case, it has less contributed to improved sustainability in targeted communities. Nevertheless, Flow does have potential to contribute to increased sustainability, when the collected data are used for monitoring and maintenance of water connections, and for other projects. Knowing that the collected data is shared with the Indonesian government, Indonesian Infrastructure initiative, local governments and the water authorities, it could be that the data will be used for new projects. Nevertheless, as for now there are no concrete plans to use the data for other projects.

A.2.2. National mapping of water points in Burkina Faso (at proposal stage)

Direction Général de l'Eau Potable (DGEP) is responsible for the development and maintenance of drinkwater infrastructure in Burkina Faso. Prior to working with Akvo, DGEP already had an approach in place for annual monitoring of the functional status of water pumps and other infrastructure.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is the German development organiasation. From its office in Ouagadougou, it has been working with DGEP and Akvo on a pilot project mapping water infrastructure for 17 municipalities using Akvo Flow.

Background of partnership

Akvo opened its Ouagadougou office in 2013 and entered discussions with the national government about the possibility to apply Akvo tools in the mapping and monitoring of DGEP's assets for supplying potable water. Akvo noticed that while DGEP already had systematic annual monitoring of its assets in place, other countries in West Africa (Benin, Mali) were developing these monitoring systems using IT solutions, while DGEP still worked paper-based.

In 2016 the pilot project mapping water infrastructure for 17 municipalities took place. The aim was to support the municipalities in the drafting of their new development plans.

Which Akvo tools does the partner use?

Akvo Flow was used in the municipalities pilot and is proposed for the national mapping exercise. Akvo has proposed a 4 months' programme, which include training of the national system aadministrator and training of trainers, who will in turn train 120 enumerators in three provinces.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Based on previous national mapping exercises, DGEP and Akvo expect that the Flow-enabled mapping will allow DGEP and its regional branches to allocate resources for construction, maintenance and repair more effectively and efficiently, as insight in the functional status of existing assets will be the basis of annual programmes.

DGEP has indicated it wants to eliminate manual entry of GPS locations of assets, as many errors were made. Errors also occur in the transfer of handwritten data into computers. Eliminating data entry, by capturing the information on-site in Akvo Flow, would eliminate these errors. A third benefit is that Akvo Flow data can be linked easily to DGEP's own GIS tool for analysis and mapping. Also, water quality is possibly an issue in as many as 80% of the water points. DGEP considers that Akvo CaddisFly could be used to systematically assess the water quality at these water points.

For DGEP it is also important to retain support from donors for future investments. In 2016, 1600 boreholes were created, but the water access rate as it was measured only increased by 0.3%. This suggests that the current way of conducting measurements is not accurate.

DGEP has remarked that its understanding of the added value of Akvo's tools is based on presentations. It will want to test the tools before actually applying them. According to GIZ, the municipality pilot showed some errors in the data and data cleaning was required. Another challenge was bad internet connectivity, which prevents data (which can be captured without having an internet connection) to be transferred at the end of the day, when working in remote regions. Finally, GIZ has indicated it would like the opportunity for municipalities to validate the data before they are entered in the national database. According to GIZ, this is currently not part of Akvo's approach.

The extent to which the use of Flow and/or CaddisFly actually contributes to improved service delivery to the poor is not known at this point, because the national mapping has not started yet.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

The extent to which the use of Flow actually contributes to improved sustainability of services in targeted communities is not known at this point, because the national mapping has not started yet.

Other findings regarding the cooperation

DGEP indicated that while other tools are available on the market and have been considered, it considers Akvo's proactive approach and presence with an office in Ouagadougou of great added value.

GIZ has remarked that while the Akvo's tools show great promise, it is to be seen whether the Burkinabese government will be able to pay for the use of Akvo tools for the national mapping every year.

Conclusion and areas for improvement

At this point, the contribution of Akvo Flow is not yet known, because the project has not started yet. Based on previous experiences and the systematic approach of DGEP to the annual monitoring exercise, Akvo expects to be able to make a significant contribution.

A.2.3. National mapping of water points in Mali

Direction Nationale de l'Hydraulique (DNH) is responsible for the development and maintenance of the potable water infrastructure in Mali.[15] A national mapping of water point using Akvo tools has been in progress since August 2015.

DNH is supported in the implementation of the national mapping by SNV (the Dutch development organisation) in Burkina Faso (BF) and Akvo. The German development bank KfW, UNICEF and the Swedish government (through UNICEF) jointly finance the project.

Background of partnership

Prior to working with Akvo, DNH already had a database (SIGMA database) that contained information about water points nationwide. However, the data were not regularly updated through systematic new measurements of the functional status of these waterpoints. According to Akvo the last complete update of the data took place in 2003, more than 10 years prior to the national mapping. The SIGMA database was developed in 1985 and today contains about 36,000 water points. About 24% of the data are missing or incorrect, and the most recent updates were made between 2011 and 2014.

KfW met with Akvo in 2014 when Akvo presented the results of a pilot project with UNICEF. After this, KfW spoke with DNH about a potential cooperation. In the course of 2015 a ToR was drafted and the project started in August 2015.

Which Akvo tools does the partner use?

The Mali government, SNV in BF and Akvo are jointly implementing a national inventory of water points in Mali. During the preparation and training phase, government supervisors and enumerators at national and regional level have been trained to implement the data collection phase to collect approximately 40,000 data points. The second phase focuses on institutionalisation of the monitoring process.

Akvo Flow is the primary tool for the national inventory. RSR is used to publish information about the project on https://rsr.akvo.org/en/project/3750. In the second phase (which is yet to start), CaddisFly will be included in the mapping of water points in the north of the country. Using CaddisFly, water temperature and connectivity, as well as nitrate, nitrite, iron and ph values will be captured. In Mali, fluor is not found in the soil and arsenic is only found in mining areas.

A challenge encountered was the matching of existing hydrogeological data with data from Flow. It became clear that 40% of the existing GPS data were incorrect, which meant that the pumps needed to be physically located and GPS tags needed to be generated based on lists with data from the SIGMA database. Because of the delay in this process, the lists were not available when enumerators were trained. As a result only 10% of the water pumps were mapped with confirmed GPS coordinates.

Because of these and other delays, some budget allocations within the project have shifted and to the date of writing this report, the mapping of water points has not been completed in the north of Mali. At the time of writing, the mapping of the water points in the north was being prepared, but had not yet started.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

MFA and Akvo expect that the Flow-enabled mapping will allow DNH and its regional branches to allocate resources for construction, maintenance and repair more effectively and efficiently, as insight in the functional status of existing assets will be the basis of annual programmes. No concrete indications that this allocation of resources has improved are currently available.

[15] Despite repeated attempts, we did not succeed in interviewing DNH. Multiple contact persons suggested by Akvo were approached multiple times via both e-mail and telephone, but did not respond, even after Akvo attempted to contact them on our behalf. We did interview a representative of KfW, as well as Akvo on this project.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

KfW commented that the use of the data is strongly facilitated by Akvo's user-friendly tools. Based on this, it can be expected that the recently gathered data will be put to good use in the management of the water points. KfW also indicated that it cannot be sure whether the Malian government will update the national mapping with future data collection rounds, as this would require re-allocation of funds within the Malian government.

With regard to the actual maintenance of assets, the evaluation team considers that the Malian government will have more relevant information to target its maintenance activities. In this regard, Akvo and MFA have suggested that it might even be possible to have private contractors conduct the maintenance and thus make it more efficient for the Malian government, allowing more water points in need of maintenance to be serviced. It is however not a given that sufficient funds are available to meet all maintenance needs.

Other findings regarding the cooperation

KfW has remarked that in West Africa, Akvo has shown to offer a unique combination of features: they have very good technical expertise, they have experience in West-Africa and they know the water sector very well. The experience of working with Akvo was very good. They have a young team, but are very experienced nonetheless. Akvo is seen as very responsible and responsive to feedback and requests. Akvo helped to get things done and ensured a speedy delivery when compared to other projects KfW has financed.

KfW indicates that the overall costs of Akvo's services are reasonable. The overhead seems limited. Daily rates are relatively high, but Akvo staff commit themselves to delivering results, rather than billing by the hour.

Conclusion and areas for improvement

At this point, the contribution of Akvo Flow is not yet known, because the project mapping was only recently completed and data still need to be entered into the database at the time of writing this report. As a result no examples of using the data for approaching the operation and maintenance of assets differently are available so far. Akvo expects to be able to make a significant contribution once all data are made available to DNH.

According to Akvo, the national mapping in Mali was a good test case, as many actors were involved, which yielded many learnings for other national mappings.

KfW has mentioned that it wonders to what extent Akvo will insist on making data publicly available. Will they refuse projects with partners who do not want to commit to opening up their data?

A.3. Case studies of NGOs

A.3.1. Aqua for All

Aqua for All is a foundation established in 2002 by the Dutch water sector. The mission of Aqua for All is to sustainably increase the number of people with access to safe drinking water and adequate sanitation, with a focus on those who most often lack that access. Aqua for All acts as a partnership broker, connecting public and private organisations from the Dutch water sector, mobilising resources, expertise and funding development aid projects focused on water and sanitation.

Background of partnership

Aqua for All and Akvo cooperated for 'Wandelen voor Water' (Walking for Water), an initiative by Aqua for All. The cooperation has continued in the form of a partnership, which was signed in February 2012. The goal of the partnership is to increase transparency by publishing all the project details including funds, deliverables, and updates, on a freely accessible website.

Which Akvo tools does the partner use?

Aqua for All is one of the oldest partners of Akvo, using Akvo RSR and Akvo Pages since the start of the partnership. Akvo Flow and Akvo Caddisfly are not used by Aqua for All, as it does not have its own projects and therefore does not have use for data collection tools. However, Aqua for All does present these Akvo tools as a service to its partners. In doing so Aqua for All does not simply promote Akvo tools to any of its partners, but carefully assesses whether Akvo could be of added value to them. Besides, Caddisfly is still in development, which Aqua for All co-finances. Furthermore, Aqua for All might use Akvo Lumen (tool to analyse data) on a large scale, once the tool is fully developed.

Aqua for All played a special role in the development of RSR. While Akvo was responsible for the technical development of the tool, Aqua for All provided substantive feedback. According to Aqua for All, Akvo has always been willing to listen attentively to their feedback and has been very responsive to their questions and suggestions.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Currently over 170 projects have been published online via Akvo RSR, showcasing the work of Aqua for All and its partners. Donors and fundraisers can follow project progress online and can showcase project developments automatically on their own websites using Akvo Pages. The data received by Aqua for All are used to increase transparency, for implementation, and for its accountability.

In this case it is hard to assess to what extent Akvo tools contribute towards improved service delivery to the poor, as the impact is made indirectly through the use of Akvo tools in projects by partners of Aqua for All, and not directly by Aqua for All itself.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

Aqua for All considers Akvo to have clear added value in terms of sustainability. However, Aqua for All stresses that it is important that the tools remain available to the partners that use them. Akvo's contribution to increased sustainability is realised if Akvo offers the tool to its partners after the cooperation. For example, RSR is sustainable if after the cooperation, the partner can still use RSR without the support of Akvo. Same holds for other Akvo tools and Akvo's trainings. If Akvo trains its partners' staff, and they in turn train regional staff, then at some stage Akvo is not needed anymore, which make the trainings sustainable. However, as of now this is not the case for Akvo tools, as they are only used in combination with buying Akvo's services.

Hence, there is no concrete evidence that Akvo tools result in improved sustainability in targeted communities.

Other findings regarding the cooperation

Aqua for All and Akvo both perceive the cooperation as very pleasant. There has always been a lot of contact between the two partners and Aqua for All believes its feedback is well listened and responded to. Besides, both

organisations have been successfully and closely working together in the development of RSR, Caddisfly and Lumen.

Conclusion and areas for improvement

Aqua for All is the oldest and largest partner of Akvo, using Akvo RSR and Akvo Pages in order to increase transparency in terms of its partners and the projects of its partners. Since the beginning of the partnership in 2012 over 170 projects have been published online via Akvo RSR. Besides the use of Akvo tools, Aqua for All also offers Akvo tools to its partners while carefully assessing whether the tools could be of added value to them.

The use of RSR and Akvo Pages by Aqua for All does not directly contribute towards improved service delivery to the poor, as it does not have its own projects. In addition, there is no concrete evidence that Akvo tools result in improved sustainability in targeted communities.

Aqua for All suggests some areas for improvement in order for Akvo to make a larger impact. Firstly, Aqua for All considers Akvo's tools to be too expensive and advises Akvo to lower its prices if it wants to remain competitive, since competitors have started offering alternative tools at lower costs. Besides, Aqua for All observes some of its partners to act rather dependent on Akvo, expecting Akvo to be the solution to everything. Also some of its partners find it unfair that Akvo tools are costly while Akvo is subsidised by the Dutch government. Secondly, Aqua for All emphasizes the difficulty to bring its smaller partners to the same transparency level, because they are often reluctant to transfer their data to an online platform. Hence, there is scope for improvement in stressing the benefits of open data.

However, Aqua for All believes that if Akvo succeeds in developing Lumen, it will be ahead again of its competitors, and could possibly deepen partnerships as well as attract new partners. Lastly, Aqua for All suggests Akvo to better formulate its unique role in the development sector and what they specifically add to this sector in terms of achieving the Sustainable Development Goals in order to differentiate itself more from others.

A.3.2. ICCO

ICCO is a non-profit organisation active in 36 countries on themes such as economic empowerment, food security and sustainable consumption, responsible business, and humanitarian aid.

Background of partnership

Akvo and ICCO have started working together in 2011 in two Consortia (the WASH Alliance on Water, Sanitation and Hygiene, and Connect4Change). In August 2015 Akvo started a strategic partnership with ICCO aiming to drive more innovative approaches in the international development and aid sector by combining their knowledge and field experience with open source mobile and internet tools.

Which Akvo tools does the partner use?

ICCO started by using Akvo RSR (hereafter referred to as RSR) complementary to their own system to report in IATI, called Promeva. Building their own system, by using their own IT capacity, resulted in a more rapid development of the database compared to the development of Akvo Lumen. However, ICCO did not manage to build project update functionality in its own system. Hence the added value of RSR for the organisation is the support of such project updates.

In addition to RSR, ICCO started using Akvo Flow (hereafter referred to as Flow) for a pilot project in Indonesia in 2012 for the HFIAS food security programme. According to ICCO the use of Flow has been a great success and significantly helped the organisation in understanding what happens in the field as well as enabling it to intervene purposefully (i.e. using project data as input for decision making).

ICCO and Akvo have together developed FoodPedia (similar to AkvoPedia, but on the subject of food security policy). Unfortunately traffic on this website has been somewhat disappointing during the past 1.5 years. Neither organisation has put significant effort in it lately.

ICCO piloted CaddisFly, but does not yet use it outside the pilot.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

A major success in the partnership is the scaling up of Flow. Currently, Flow is being used in 20 countries where ICCO is active. ICCO describes the most important added value of Flow as the ability to save geolocations when conducting a survey, something they were incapable of before using the tool. As a result one can go back to the original interviewed households, allowing to collect longitudinal data (i.e. data collected from the same household at different times). Akvo also point ICCO in the direction of the CartoDB tool (https://carto.com). Also, the progress of data collection can be tracked in real time. ICCO indicated that following the Flow dashboard in real time is a major step forward from the old way of doing things, meaning e-mails with data coming in from local team members with a delay, so that steering of the data collection was no longer possible. Also, sometimes local team members forgot to send these e-mails, which caused further delays. Thirdly, the use of collected data as support for lobbying at local governments to put certain issues (for instance food insecurity in remote areas) higher on the agenda is a major benefit to ICCO's work.

However, data use (collected through Flow) for managing ICCO's projects is yet something to improve. To illustrate the latter, a hunger survey has been conducted in 14 countries, though baseline, midterm and endline measures are available for only 6 countries, while the second and third measures are important input when using data for project management. Besides, the use of data for decision making requires monitoring and evaluation management, something that is not routinely done for all of ICCO's projects. In order to achieve the above ICCO suggests that, besides internal organisation changes, there is still some improvement to be gained in the well-functioning of Akvo's tool (e.g. properly functioning of the dashboard and using Flow on different types of mobile phones). Furthermore, ICCO also makes use of Akvo's data sciences services (data analysis) since late 2016, which could also be input for improved project management.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

Whether Flow contributes to improved sustainability in targeted communities is according to ICCO not easy to define. However, ICCO is working on linking SCOPE, a tool that measures business capabilities of farmer cooperatives, to Flow datasets including measures of food insecurity. Hard data are not available yet, but this is work in progress and could lead to improved sustainability in targeted communities.

Other findings regarding the cooperation

Exploring joint fundraising opportunities and sharing resources are some other core elements of the cooperation. ICCO and Akvo agreed that mutual benefits can be achieved in joint project development. Nevertheless, according to ICCO deeper commitment of Akvo should lead to better results. Furthermore, ICCO believes that sharing resources such as offices and training facilities, trainers and materials is yet to improve. The perception is that Akvo does not always make optimal use of ICCO's regional offices, something which could enhance the upscaling of Flow to a larger extent.

Akvo has also added support by a data scientist to its services for ICCO. The data scientist provides knowledge ICCO does not have and is very pleased to receive. With the help of the data scientist, ICCO can conduct complex analyses of the data it has collected. Based on this experience, ICCO expects Akvo to move further from merely providing tools to providing consultancy services in working with the data collected.

Conclusion and areas for improvement

Akvo's tools contribute to improved service delivery to the poor in ICCO's projects in various ways. The foremost added value of the use of Flow is the ability to save geolocations of households when conducting a survey. As a result targeted communities can be followed in time, which leads to improved targeted intervention and potentially to improved project management.

In order for Akvo to enhance its impact ICCO suggests some areas of further development. First of all, Akvo's pricing is a debate within ICCO, emphasizing the high costs for local support and trainings. In addition, Akvo's trainings are perceived as too long and thus costly not only in terms of additional daily rates charged by Akvo, but also time spent by ICCO staff attending trainings. ICCO's suggestion to lower training costs is to implement deeper commitment in terms of resource sharing. ICCO's and Akvo's local staff could play a larger role in providing trainings in local regions. Moreover, ICCO sees scope for improvement in terms of implementing user

feedback. Although Akvo seems to respond rather quickly to user feedback, it lags in translating the feedback into real product development.

A.3.3. Plan Finland

Plan Finland is an international development organisation promoting children's rights throughout the world. Plan aims for a world where human rights are respected and children can live up to their potential as full members of society. Plan Finland has been operating since 1998 and is part of Plan International, which was founded in 1937. Plan International works in 69 countries and runs development programs in 50 countries.

Background of partnership

Plan Finland desired to become more transparent by contributing to open knowledge and open data. Therefore, the organisation decided to start publishing its project data in IATI. In order to achieve this, three options were considered: 1) small investment by using free reporting tools via Aid Stream and publish to the IATI registry, 2) medium investment by using Akvo RSR, a more sophisticated and visual system, also providing professional webpages, 3) big investment by developing a fully integrated custom-made system (like Cordaid has done).

Plan Finland chose the medium investment and started a strategic partnership with Akvo in February 2015. They agreed on working together to use RSR to store the Plan Finland project portfolio, visualise this on the Plan Finland website, and publish the portfolio to the IATI registry. Plan Finland chose Akvo because it was the best balance between investment and return on investment. Other reasons for choosing Akvo RSR were the user-friendly webpages, which are a good way to inform the general public about Plan Finland's activities, and the service of the features of the data.

Which Akvo tools does the partner use?

Plan Finland has been using RSR since February 2015. Later on Plan Finland also started using RSR for reporting. Currently, Plan Finland reports to the Ministry of Foreign Affairs of Finland directly from RSR, which greatly reduces time required to produce reports. The organisation does not use any other Akvo tools such as Akvo Flow, since it already had a collection data tool before working with Akvo. Moreover, Finland is the only Plan office using Akvo RSR. All offices choose their own tools and Plan Netherlands for instance is developing an integrated custom-made system.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Akvo RSR enables Plan Finland to directly publish information on Akvo, in contrast to working with long narrative reports, like the organisation did before to using the tool. According to Plan Finland reflection and rethinking certain structures are a major benefit of working with Akvo. For example, Akvo requires requires more text and explanations that IATI. Plan Finland considers this to be a good thing, because it raises the standard for publishing data. Akvo also advised Plan Finland to use less jargon in order to make texts more meaningful to the public. In addition, during the process of publishing the indicators and results, Plan Finland realised that the quality of their work was not at the level they wanted it to be. Hence, increasing the quality of Plan Finland's work has been an important outcome of working with Akvo. Moreover, Akvo has made Plan Finland reflect on its own monitoring and evaluation approach, regarding e.g. the structure of data and indicators used. Furthermore, Plan Finland realised it needed to implement a standardised way of working with their data in order to be able to aggregate data. This realisation was reinforce by the recommendations made by two external evaluators. To sum up, Plan Finland has come to many insights while working with Akvo with regards to their data collection, M&E structure and what to present to the public and how.

However, thus far the data is not very visible on the website. A user will have to search for the link to the IATI data. However, as the site is in Finnish, international users may find this challenging.

Plan Finland has been interested in IATI since the 2013 Open Data Conference in Helsinki. Plan Finland has been lobbying the Finnish Ministry of Foreign Affairs to make IATI reporting compulsory for Finnish NGOs. However, the Ministry has thus far not adjusted its policy. According to Plan Finland, the Ministry does accept its reports based on RSR and appreciates them. To date Plan Finland claims to be the only Finnish NGO reporting in IAIT.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

The question whether RSR and Akvo's services have improved sustainability in targeted communities was not answered directly. We have found no indications that this is the case.

Other findings regarding the cooperation

Overall, Plan Finland finds it very pleasant to work with Akvo and believes they get a good value for the services provided. From the experiences of Plan Finland, Akvo has been very responsive and helpful throughout the partnership.

Plan Finland stresses the point that data is checked and entered by young Fins as part of social civil service, who rotate every 6 to 8 months. This requires constant training of people to get to know RSR and learn how to enter the data. As a result, knowledge is not retained, and thus does not contribute to improved sustainability in the organisation. Without the social civil service temps, it could become quite costly to maintain the current approach to publishing the data online.

Conclusion and areas for improvement

Akvo has helped Plan Finland to a great extent in terms of reflection and understanding of their their data collection and MNE structure. There have been no major obstacles during the partnership. However, the biggest challenge at the moment is to make the reporting tool more user friendly, more visual appealing and more understandable. There is still scope of improvement for Akvo and Plan Finland in terms of making the indicators, results and quantitative data in the reports more easily understandable to the public.

In addition, although Akvo's user interface is good, the IATI standard itself needs a little more thinking (many fields and conduct codes). This is not something Akvo can influence directly, yet they need to be compatible with it as well. Another area of improvement is retaining knowledge when it comes to entering data into RSR.

No effects on service delivery to the poor or sustainability in targeted communities have been reported.

A.3.4. SNV in Burkina Faso

SNV is the Netherlands development organisation. It has 40 years of experience in multi-stakeholder development projects. SNV has a presence in many developing countries. For this case study, the interview took place at SNV's office in Ouagadougou, Burkina Faso.

Background of partnership

SNV's head office in the Netherlands actively promotes Akvo tools. The extent to which they are used differs per country, as it is SNV's philosophy to source its resources locally. For example, Burkina Faso has no other providers of similar tools, so Akvo was the logical choice. In Ugganda there are many local providers of tools, which are cheaper than Akvo's. Therefore, other tools are used there.

Which Akvo tools does the partner use?

SNV in Burkina Faso piloted Akvo Flow in June-October 2014. The aim was to allow Burkinabese municipalities to work with the data and share the data with higher levels of government, to explore the possibilities. Since then, Flow was used in multiple projects. SNV in BF finds that donors are enthusiastic about the presentation of a data collection tool that can be used for monitoring in its proposals.

SNV in BF is now also using CaddisFly, as in Burkina Faso water points are only tested when commissioned. CaddisFly allows to re-test later in time, to ensure the water quality remains sufficient.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Akvo Flow helps SNV in BF to visualise maps of its projects. This helps to communicate findings of the surveys better than just data in a table or diagrams would. Stakeholders who are not used to interpreting data can be

informed much better. The maps provide a good starting points for discussion of project results and direction of next steps.

Also, using Akvo Flow can help prevent fraud on the part of enumerators, because the GPS location is capture at data entry (similar to what is reported in the case study on Cardno in paragraph A.2.1.).

More data are available for communication to external stakeholders, which increases transparency. In this regard, SNV in BF has noted that the Burkinabese national department of water, Office national de l'eau et de l'assainissement (ONEA), wants to analyse data on water quality first, before publishing them online. Apparently, publicly reporting on the quality of drinking water is a sensitive matter. SNV in BF itself is in favour of open data and sharing of data, as this allows people to ask questions and be critical of their government, and thus empowers them.

SNV in BF could not provide examples of improved service delivery to the poor. It does not think this occurs as a result of data tools. However, working more efficiently in surveys does free up financial resources for other work in which impact can be delivered.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

SNV in BF could not provide examples of improved sustainability.

Other findings regarding the cooperation

SNV in BF notes that Android phones are still expensive, which is a limit to possibilities for upscaling of Akvo tools.

Conclusion and areas for improvement

Akvo tools have helped SNV in BF to make convincing proposals to donors, conduct surveys more efficiently and increase its transparency to stakeholders. SNV in BF could not provide examples of improved service delivery to the poor or of improved sustainability.

A.3.5. Tipaalga

Tipaalga is a local NGO in Burkina Faso, whose activities are aimed a conservation of trees and responsible use of natural resources.

Background of partnership

Tipaalga is running a project to train women in Burkina Faso to make improved cookstoves, using materials naturally available. The cookstoves are designed in such a way that they leave little room between a woman's cooking pans and the cookstoves, so that no heat from the fire escapes and all heat goes directly toward heating the pan (see picture to the right).

As a result:

1. the amount of wood and other vegetation burned to cook a meal is reduced;
2. the women save time during the activities of gathering wood and cooking their food, because the food is ready to eat faster with the better-channelled heat;
3. CO_2 emissions are reduced as less wood is burned, which allows the project to be financed as a CO_2 compensation project.

Which Akvo tools does the partner use?

In order to ensure the award of the CO_2 compensation credits, which ensure the financing of the training of the women participating in the project, the exact amount and type of cookstoves per households needs to be captured. This is done using Akvo Flow.

According to Tipaalga, Flow generates error-free data, with pictures and GPS coordinates to provide supporting evidence of the number of cookstoves in a household. For each cookstove, depending on its size, a pre-calculated CO_2 emission saving factor is calculated, to arrive at the total amount of CO_2 emissions reduced as a result of the project. The picture to the right shows an enumerator taking a picture of a women with her cookstoves as evidence in the Flow survey.

In total 35,000 cookstoves in 16,000 households have thus far been captured in the Flow survey.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

The Flow survey in this project serves purely as a tool to ensure accountability to the project's funder, the CO_2 emission compensation scheme. However, as the revenues generated by the reduction in CO_2 emissions in a group of villages are used to finance training of the women in the next group of villages, it could be argued that without the evidence of implementation provided by the Flow survey, the scale of the project could not have been this big. In that sense, the use of Flow contributes to the speed of service delivery to the poor.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

The sustainability of the project is not improved by the use of Flow.

Other findings regarding the cooperation

Tipaalga indicates that an important reason to select Akvo Flow instead of another tool is the local presence of an Akvo office, which facilitates support for the use of its Flow tool. Tipaalga also mentions that it has started up a second project using Flow, in which it can operate without needing support from Akvo. The organisation learned a lot from the first project and several staff are now trained in the use of Flow.

Conclusion and areas for improvement

The use of Flow contributes to the speed of service delivery to the poor by helping to ensure the project's financing in a swift and reliable manner, but not directly to the service delivery itself.

Tipaalga mentions two challenges:

- Slow internet connections mean that enumerators have to upload the data in batches, which then have to be coupled together again.
- There are some technical challenges with specific features of Flow that do not always work correctly such as grid questions and the "DisplayName" function.

A.4. Case studies of non-users of Akvo tools

A.4.1. Cordaid

Cordaid is one of the largest international development organisations, founded in 1999 in the Netherlands, aiming to help people in distress and fighting structural poverty. Cordaid has an extensive network of 890 partner organisations in 36 countries in Africa, Asia, the Middle East and Latin America.

Background of partnership

In 2012 Cordaid started a large reorganisation with the aim to enhance project transparency. In this same year Cordaid signed a partnership with Akvo with the goal to visualise Cordaid's total project portfolio (nearly 1,000 development projects) on its website. In order to achieve this Cordaid staff worldwide has been trained to use Akvo RSR for project reporting. However, in 2016 the partnership ended as Cordaid had decided to develop its own, fully integrated custom-made system.

Which Akvo tools does the partner use?

Since the start of the partnership Cordaid has been using Akvo RSR as an online project database and reporting tool for staff and partners. With the use of RSR, Cordaid's project data meet IATI standards. The integration of project data into Cordaid's newly designed website has created both a linking and learning tool between implementers, and an accountability tool towards the general public and other stakeholders.

Akvo Flow was never widely used within Cordaid, especially not on a corporate level.

Cordaid used RSR slightly different compared to other partners of Akvo. In fact, Cordaid used to deliver its own datafiles that Akvo entered in the system. According to Cordaid a major added value of RSR is the attractive and professional visualisation of reports in IATI. The user interface and design of RSR is of significant quality. According to Cordaid, the unique selling point of Akvo is bringing primary information online, while facilitating storytelling around this information and project updates.

At the back-end of the system Cordaid ran into some obstacles during the period of partnership with Akvo. First, different expectations to edit the data once it was published online became an issue. According to Cordaid making changes or remove the data was cumbersome and difficult once the information was uploaded on Akvo RSR. However, the contract agreed on a quarterly synchronization process, in which changes could be made. Hence, Akvo believes that expectations to edit the data outside the quarterly process were not managed correctly by Cordaid. To handle this issue Akvo trained staff to make changes directly in RSR as well (outside the quarterly process) – to support Cordaid in making live changes outside the contractually agreed quarterly updates. Second, Cordaid had to pay for the full package while only a part of RSR was used (did not use project updates), which has caused the tool to become relatively expensive. Trainings were not efficient, as they were provided in the form of multiple-day on-site trainings, where an online tutorial should have sufficed.

To sum up, the issue regarding different expectations of editing the data together with the high cost of RSR and the availability of alternative tools (e.g. Power BI) have made Cordaid decide to end the collaboration with Akvo in 2016.

From Cordaid's perspective the use of RSR is sustainable in the sense that the synchronization of datasets is mostly automated and requires only basic maintenance and support. Cordaid staff is trained in the use of RSR back-end, and can manage the data without much support.

To what extent and how have Akvo tools contributed towards improved service delivery to the poor?

Cordaid has indicated that the use of Akvo RSR in the 2011-2014 period was of added value for transparency and communication purposes. However, it did not add to improved service delivery to the poor.

Does the use of Akvo's tools by the partner result in improved sustainability in targeted communities?

No effects on sustainability in targeted communities have been reported.

Other findings regarding the cooperation

At the beginning of the partnership Akvo was a real frontrunner and both organisations worked closely and successfully together. However, in the four years op partnership Cordaid has technologically advanced to a large extent, including an increase in its own IT capacity. Because Cordaid's vision differed much from Akvo's vison regarding the development of the back-end of the system, the two organisations grew apart and RSR was no longer of added value to Cordaid's work.

Conclusion and areas for improvement

Cordaid considers the front-end of Akvo RSR, the visualisation of data, to be of significant quality. About 1,000 development projects have been published on Cordaid's website, which looks appealing and professional. Yet, Cordaid experienced some obstacles regarding the back-end of the system. Together with the relative high costs of RSR, and the availability of alternative tools, Cordaid decided to develop their own fully integrated system.

Moreover, regarding the project update functionality of RSR, Cordaid sees scope for improvement in making trainings more efficient by providing them through online tutorials.

Nevertheless, Cordaid believes that Akvo RSR is a great solution for relatively small organisations that do not have their own IT capacity, and hence look for the full package including service support and trainings. Although the collaboration between Cordaid and Akvo came to an end, the collaboration did start the kick-off of the transparency movement in the development aid sector (in the period 2011-2014), and thus should be recognized as significant impact in this sector.

No effects on service delivery to the poor or sustainability in targeted communities have been reported.

A.4.2. Netherlands Enterprise Agency (RVO.nl)

In 2015 Akvo, together with Zimmerman & Zimmerman and four others, responded to a request for proposals of RVO's international development department. The RfP concerned visualising a data set on an RVO IATI website through a 'software as a service' solution. The goal of the project was to build a website to publish 19 programs and 1200 international development projects. The project was awarded based on the following five assessment criteria:

1. quality of the elaborated Proof of Concept (30 points);
2. assessment on the answers to the questions (20 points);
3. the budget required in relation to the proposed activities to be performed (30 points);
4. assessment of the information provided by the Skill and Road map (10 points);
5. the information given in the Explanatory Call (10 points).

Based on the above criteria Zimmerman & Zimmerman won the project instead of Akvo. According to RVO there was little difference between the proposals submitted by Akvo and Zimmerman & Zimmerman in terms of technical content, since both are experts in IATI. However, Akvo's offer was more expensive than Zimmerman & Zimmerman's, this being the primary reason for awarding the project to the latter. However, RVO appreciated Akvo's close contact and its significant help in the thinking process during the preparatory phase of the tender.

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Contract Plan Finland (2017), *Plan Finland - RSR 2017*

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C. Interviews conducted

MFA
Dick van Ginhoven
Kees Oude Lenferink
Theo van de Sande
Fred Smiet

Akvo
Thomas Bjelkeman-Pettersson
Machteld Galema
Peter van der Linde
Lars Sjögreen
Charlotte Soedjak
Jeroen van der Sommen
Josje Spiering
Mark Tiele Westra

Case studies of projects with national governments		
Case	**Contact**	**Organisation**
Cardno	Peter van der Linde Gerry Mc Manus	Akvo Cardno
National mapping of water points in Burkina Faso	Emeline Bereziat Dofihouyan Ye Mr. Torobo Sandrine Tapsoba	Akvo Direction Général de l'Eau Potable (DGEP) GIZ
National mapping of water points in Mali	Dagmar Verbeek Aurélie Leucht	Akvo KfW

NGOs		
Case	**Contact**	**Organisation**
Aqua for All	Annabelle Poelert Marleen Hasselerharm	Akvo Aqua for All
ICCO	Christien Bosman Martijn Marijn	Akvo ICCO
Plan Finland	Charlotte Soedjak Mika Välitalo	Akvo Plan Finland
SNV in Burkina Faso	Emeline Bereziat Jeanette de Regt Aminata Konkobo	Akvo SNV in Burkina Faso SNV in Burkina Faso
Tipaalga	Emeline Bereziat Alain Traore Multiple beneficiaries encountered during field visit	Akvo Tipaalga

Non-users of Akvo tools		
Case	**Contact**	**Organisation**
Cordaid	Charlotte Soedjak Caroline Kroon Roderick Besseling	Akvo Cordaid Cordaid
RVO	Erik Hesseling	RVO

Other	
Contact	**Organisation**
Barnabas Apom	Ghana Netherlands Business and Culture Council