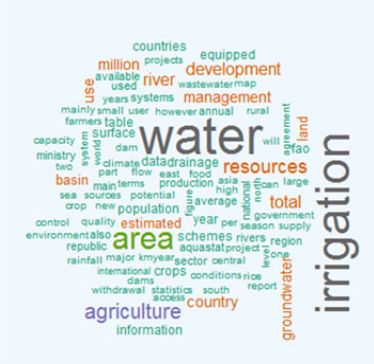

Irrigation Systems Inventory

Inception Report: Part 2/5 – Stakeholder Analysis and Consultations

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Contents

Executive Summary

This report represents the first of five in the inception phase of the development of an Irrigation Scheme Inventory (ISI) of smallholder irrigation schemes in Zimbabwe. It documents the development of a stakeholder map and consultations with key stakeholders in smallholder irrigation in Zimbabwe.

The **stakeholder mapping** exercise was useful in determining 'veto,' key, primary and secondary stakeholders from government, donors private sector and development organisations. Ministry of Agriculture, Mechanisation and the department of Irrigation Development Department of Irrigation were categorised as veto players, without whose support and participation the targeted results of the project would not be achieved. The Department of Irrigation expressed considerable interest in participating in the ISI, a welcome development considering its veto status.

There was good **demand** expressed for an inventory amongst the stakeholders interviewed. The benefits included the ability to quickly identify schemes fitting with criteria suiting the investment profile.

All of the **categories of fields** identified in a literature review (i.e. water, land and infrastructure resources; demographics, scheme management, productivity and markets) were considered to be important by the majority of respondents. Information on scheme demographics was not as popular. Despite this, Better Agriculture point out that on demographic information is important for risk assessment. Respondents provided useful views on data collection and system specifications that will be incorporated into the procedures to be developed in the next phases of the ISI.

There was general agreement amongst stakeholders that the **data collection** process would be an expensive undertaking. This would affect the identity of the research officers undertaking the surveys – they could be government officers, private sector teams or development agencies working at the schemes. Whilst government is the obvious choice, concern was expressed over the capacity to implement such a project. However private sector might find it difficult to work at the schemes without government buy-in.

There was cautious approval for an '**open system'** that is accessible on the internet. However some companies specified that they would not necessarily want details of their work published; and Department of Irrigation was concerned for the privacy of farmers. These issues will need to be dealt with in greater detail in the post-inception phase. The benefits of the system to potential investors might be negated through information restrictions. **Hosting** of the system could be done on in-house or remote (cloud) servers. Department of Irrigation preferred the latter due to security concerns.

The majority of respondents agreed that the ISI should be a public good and ultimately, **ownership** should be with the government. Government however lacks the resources and in the absence of direct donor funding, it might be necessary to implement the ISI through an alternative mechanism. This could be done for example, through a development agency. The ISI could then be transferred to government as it develops capacity (financial and human resources) to continue development, maintain and update the ISI.

There were various suggestions on how the ISI could be **operated and maintained**. Some stakeholders expressed concern that government would not have the financial capacity to play this role. Some of these suggested that ownership could be vested with government who would outsource these activities to a service provider. Department of Irrigation would not be averse to such an arrangement, especially in the first few years during which its own capacity could be improved.

It will be essential to secure **funding** for developing the different stages of the database (establishment, data collection, operating, maintenance etc.) since funding could come from different sources. It was agreed that government would not likely be able to fund the project unless it was included in the national budget. Government could however contribute to data collection through the use of research officers from Department of Irrigation or Agritex. The World Bank related the possibility of direct government funding for the ISI through the ZIMREF Framework. Significantly, no donors expressed willingness to fund the programme directly. FAO expressed interest in funding the database through its various coordination budgets. Small contributions to operational costs could be made through user fees and website advertising.

In conclusion, this study provides a very good baseline for the next steps in the ISI inception phase:

- Database structure development;
- Development of field survey methodology and field testing of instruments at irrigation schemes; and
- Development of a business model to outline costs and potential revenue streams.

Introduction

Agriculture contributes 15-20% to Zimbabwe's Gross Domestic Product, estimated at US$ 11.427 billion in 2012 (GOZ, 2012), and accounts for 40% of the nation's exports (GOZ, 2013a). The sector accounts for 25% of formal employment and provides livelihoods for over 70% of the rural population. The sector is central to the economy in guaranteeing food security and backward and forward linkage to markets. The agro-processing industry draws some 63% of its input requirements from agriculture (GOZ, 2013a).

The government of Zimbabwe has prioritised irrigation development since 1930 when it embarked on a national dam construction programme for large scale commercial farmers (GOZ, 2004). In a country where agriculture is dependent on a single rainy season (November through March) irrigation is an important strategy for increasing productivity through:

- Provision of supplementary water during mid-season dry spells, or seasonal droughts.
- Winter production of crops such as pulses (sugar beans), cereals (wheat) and horticulture.

In addition, access to irrigation allows farmers to explore the production of new, higher valued crops.

According to the World Bank (2013a), the country now has more than 8 000 dams which in 2000, commanded more than 120 000 ha of irrigation land[1]. The Fast Track Land Reform Programme that commenced in 2000, and the related decade-long period of economic decline, contributed to a reduction in this irrigated area. The same report estimates that in 2012 the area under irrigation was only 51 000 ha[2] (*ibid.*).

Government policy is to rehabilitate these idle irrigation schemes before developing new ones (e.g. GOZ, 2013b). It is estimated that about 200 000 ha can be developed from existing under-utilized storage capacity and dams under construction (World Bank, 2013b). Furthermore, the irrigation potential of the country is estimated at around 365 000 ha, considerably less than irrigable land, estimated at 600 000 ha (*ibid.*).

The Government of Zimbabwe continues to promote irrigated agriculture through various policy documents including the Medium Term Plan (GOZ, 2011), CAADP compact (GOZ, 2013c), Zimbabwe Agricultural Investment Programme (GOZ, 2013a), Zim-Asset (GOZ, 2013d) and most recently, the 2014 National Budget Statement (GOZ, 2013b).

[1] This value is based on satellite imagery. However estimates vary widely in the literature. For example, the ZAIP document (GOZ, 2013a) reports that 200 000 ha were irrigated in 2000

[2] See Footnote 1. The ZAIP report (GOZ, 2013a) estimates that 135 580 ha was under irrigation in 2009. World Bank (2013b) estimate that between 70 000 and 135 000 ha are currently being irrigated. The equivalent estimate in Zim-Asset (GOZ, 2013d) is 150 000 ha.

Since independence in 1980 government has focused on irrigation development in communal farming areas, many of which are located in drought-prone regions. Over 180 smallholder schemes have since been developed on communal and old resettlement schemes commanding an area of 8103 ha (GOZ, 2004). A further 2000 ha have been developed on small scale commercial farms. Thus a total of up to 10000 ha of irrigation are available in the formal smallholder subsector (*ibid.*). One of the features of these schemes is that, for the most part, they are stuck in a recurring cycle of build, operate, decline and rehabilitation with the latter process usually being funded by government or international donors on a grant basis. To this end, government has allocated US$9.4 million for communal irrigation schemes in the 2014 budget, whilst the Swiss government recently provided a grant for the rehabilitation of Rupike and Pfuve Panganayi irrigation schemes in Masvingo Province. This cycle points to a lack of capacity of scheme beneficiaries to maintain their equipment. World Bank (2013a) note that a lack of technical capacity also extends to national institutions such as ZINWA.

According to World Bank (2013a), the restoration of irrigation infrastructure is necessary *but not sufficient* to restore irrigated agricultural production. Other constraints include uncertainties about land tenure, absence or dilapidated infrastructure, unreliable power supplies and weak input and output markets. They argue that past budgetary allocations by the Ministry of Finance have not been effectively used because of these constraints. There is thus a need to focus on 'software' (i.e. capacity) and market issues as well as the more obvious hardware limitations.

It is against this background that Welthungerhilfe (WHH) and GIZ through the Agricultural Inputs Supply Programme (AISP) plan to develop methods and tools that will assist investors (private sector, government and donors) in making decisions on selection of irrigation schemes providing the best investment opportunities. WHH and GIZ have considerable experience in smallholder irrigation system development and the smallholder farming sector in Zimbabwe and throughout the developing world. These organisations have contracted Floranature, an agricultural consulting firm specialising in the smallholder farming sector, to develop the framework for an Irrigation Systems Inventory (ISI).

The stakeholder analysis and interviews are the second activity undertaken in the ISI programme, following on after the literature scan. The Terms of Reference for this study requires that the following steps be undertaken:

- Stakeholders identified using an external stakeholder mapping tool (GTZ, 2011)
- Survey instruments developed based on the experience of the consultants and best practices identified in the literature.
- Interviewing of stakeholders.

This paper documents the progress made in undertaking these activities, and reports on the results of the stakeholder survey.

Acronyms used in this report

Agritex	Department of Agricultural, Technical and Extension Services
Agritrade	Agritrade Revolving Credit Facility
AISP	Agricultural Inputs Supply Programme (AISP)
AMA	Agricultural Marketing Authority
AMID	Ministry of Agriculture, Mechanisation and Irrigation Development
BA	Better Agriculture
BPC	Bulawayo Projects Centre
BRICS	Brazil. Russia, India, China and South Africa
CABS	Central African Building Society
CARE	CARE International in Zimbabwe
CAADP	Comprehensive African Agricultural Development Programme
CBZ	Commercial Bank of Zimbabwe
CFU	Commercial Farmer's Union
CREATE	Credit for Agricultural Trade and Expansion
DA	District Administrator
DFID	Department for International Development
DOI	Department of Irrigation
E&M	Economics and Markets
EU	European Union
FAO	Food and Agricultural Organisation
FGD	Focus Group Discussion
GPS	Global Positioning System
GIZ	Deutsche Gesellschaft fur lnternationale Zusammanarbait
GRM	GRM International
GOZ	Government of Zimbabwe
ha	Hectare
IMC	Irrigation Management Committee
IRC	International Rescue Committee
ISI	Irrigation System Inventory
JICA	Japan International Cooperation Agency
IWMI	International Water Management Institute (a CGIAR institute)
km	Kilometre
LFSP	Livelihoods and Food Security Programme
M&E	Monitoring and Evaluation
MOF	Ministry of Finance

nd	No date
NGO	Non Governmental Organisation
O&M	Operation and Maintenance
PLAN	PLAN International
RDC	Rural District Council
SAMP	Seeds and Markets Programme
SDC	Swiss Development Cooperation
SMIDSP	Smallholder Micro Irrigation Development Support Programme
SNV	Netherlands Development Organisation
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	World Bank
WFP	World Food Programme
WSIA	Water Sector Investment Analysis
WUA	Water Use Association
ZFU	Zimbabwe Farmers' Union
Zim-AIED	Zimbabwe Agricultural Income and Employment Development Programme
ZESA	Zimbabwe Electricity Supply Authority
Zim Asset	Zimbabwe Agenda for Sustainable Socio-Economic Transformation
ZINWA	Zimbabwe National Water Authority

Methodology

The methodology for the external stakeholder mapping tool is provided in detail elsewhere (GTZ, 2011) and is not repeated here. Results of the mapping exercise are given in the next section.

The stakeholder interview questionnaire was developed using a number of resources:

- The Terms of Reference
- The Literature review
- Discussions within the consulting team and with the clients.

The final instrument is presented as Appendix 1. Interviews were held during a four week period in March and April 2014 with the eighteen stakeholder organisations listed in Appendix 2. In most cases the instrument was not circulated to respondents in advance of the meeting. The exception was government institutions who typically requested that it be emailed in advance of the meeting to enable circulation for feedback from colleagues within the organisation.

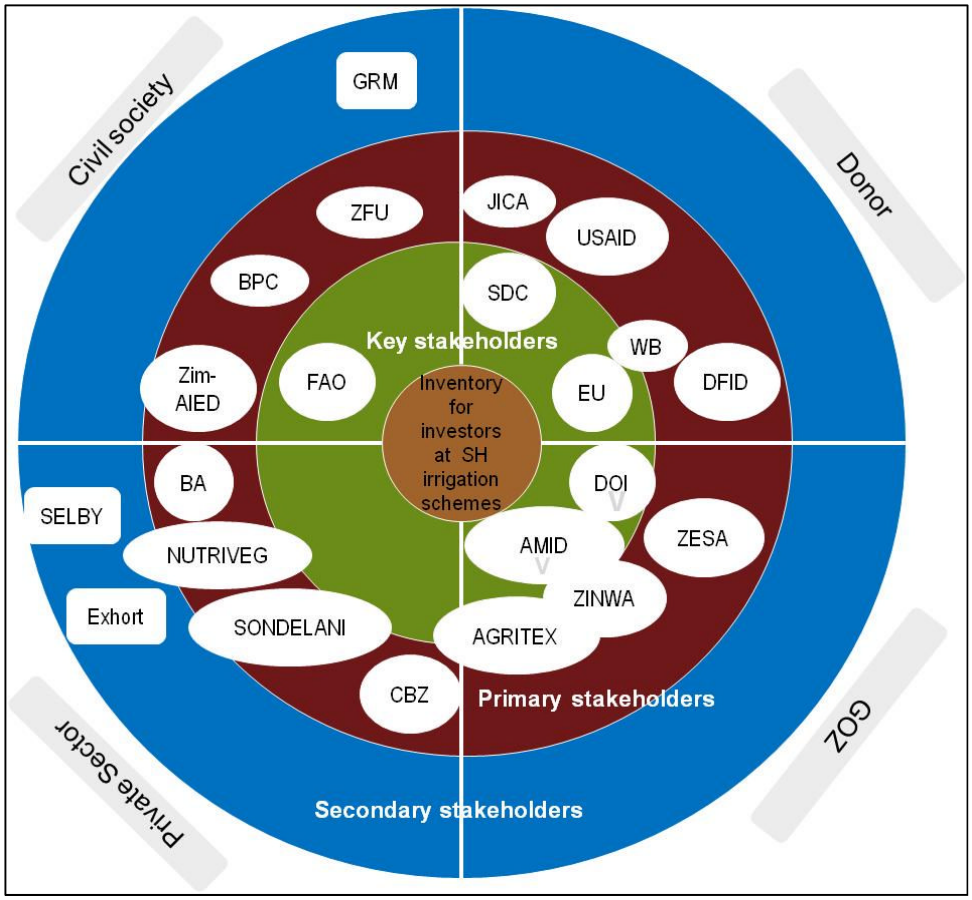
Policy affecting irrigation

A number of respondents discussed underlying policy issues with have an adverse influence on irrigation and many are bemoaning the absence of an irrigation policy. Although the policy level is beyond the scope of this work, specific issues raised are presented below:

- Water pricing policy. A viable model has not been developed since land reform disrupted the previous model which relied heavily on payments by the commercial farming sector. ZINWA is now depending on municipal supplies for all their funding, which previously supplemented funds from the rural areas. Water prices are very high compared to the economic base.
- Property rights/contested land. New farmers are not cooperating and irrigation infrastructure, formerly developed for larger commercial farmers, is not suited to smaller plots. 99 year leases are not bankable as they provide inadequate security, with land allocation/reallocation remaining subject to the whims of government.
- Indigenisation. The private sector will not invest in smallholder irrigation with existing uncertainties.
- Economic environment. Most smallholder schemes are underperforming – at 25% of potential yield. Those with access to credit (e.g. through contract farming) are performing better.
- Revolving fund for irrigation. World Banks supports this concept which was central to the development of irrigation in the 1980's. This approach for funding irrigation development if is recommended in the WSIA report.

Stakeholders

The stakeholder mapping exercise was done prior to the stakeholder interviews. During the course of the interviews suggestions to include additional stakeholders had been made. This is included in the second part of this section.



Explanation of acronyms: Civil society – Zim-AIED (USAID funded Zimbabwe Agricultural Income and Employment Development programme), BPC (Bulawayo Projects Centre), GRM (GRM International), ZFU (Zimbabwe Farmers' Union), FAO (Food and Agriculture Organisation). Private sector – BA (Better Agriculture), CBZ (Commercial Bank of Zimbabwe). GOZ (Government of Zimbabwe) – DOI (Department of Irrigation), AMID, Ministry of Agriculture, Mechanisation and Irrigation Development. Donors – DFID (Department for International Development), EU (European Union), JICA (Japan International Cooperation Agency), SDC (Swiss Development Cooperation), USAID (United States Agency for International Development), WB (World Bank)

Figure 1. Stakeholder map – ISI for private sector investors

Stakeholder map

The stakeholder map presented in Figure 1 was developed using GIZ methodology (see footnote 1) and the following description is mostly extracted from that document for convenience.

The first step of the exercise involves the identification of all actors relevant to the proposed ISI – this was done with a special focus on potential investors. These actors were then

assigned into one of three groups – key stakeholders, primary stakeholders and secondary stakeholders.

Key and primary stakeholders are identified using circles with the relative size of the circle depicting the relative importance or influence of the organisation – with respect to the development of the ISI. Some of the actors are referred to as 'veto' players and the 'V' is placed inside their circles. Secondary stakeholders are shown using rectangles.

The visualisation scheme shown in the figure allows for the easy identification of actors in each of four sectors – donor, government, private and civil society.

Individual actors are then placed within the framework.

Key stakeholders

Key stakeholders are actors who are able to use their skills, knowledge or position of power to significantly influence a project or are influenced by it. Key stakeholders are those actors without whose support and participation the targeted results of a project cannot normally be achieved, or who may even be able to veto the project, in which vase they are named veto players.

Key stakeholders identified for the ISI are focussed in the government sector, but also found in the donor and civil society sectors:

- Donors – EU (European Union) and SDC (Swiss Development Cooperation) are considered to be key stakeholders due current sector funding activities. The WB will hold the key to funding irrigation-related studies and pilots through the ZIMREF.
- Civil Sector – the only key organisation identified is FAO (Food and Agricultural Organisation) which is implementing the EU and SDC funded programmes.
- Government – the Department of Irrigation (DOI), 'responsible for the 'overall planning, design, construction, sustainable operation, maintenance and management of communal irrigation schemes' is considered a 'veto' player. It is a major investor and has an important influence at schemes. The other 'veto' player is considered to be the parent Ministry of DOI, the Ministry of Agriculture, Mechanisation and Irrigation Development (AMID), responsible for policy development through the Department of Economics and Markets (E&M). Agritex (Department of Agricultural, Technical and Extension Services) have field officers posted at most schemes who are providing farmers with agronomic advice, and who are used to provide Monitoring and Evaluation (M&E) services for government. ZINWA (Zimbabwe National Water Authority), which controls the allocation of water from water sources, is also considered to be a Key Stakeholder.

Primary stakeholders

Primary stakeholders are those actors who are directly affected by the project, either as designated project beneficiaries, or because they stand to gain (or lose) power and privilege, or because they are negatively affected by the project in some other way.

Most private sector and civil society stakeholders are placed within this category:

- Donors – there are a number of donors who have historically, or are currently playing an important role in irrigation but are not considered to be key players. These include DFID (Department for International Development), USAID (United States of Agency for International Development) and JICA (Japan International Cooperation Agency). DFID is rolling out a Livelihoods and Food Security Programme (LFSP) through FAO which could include, but is not specifically focussed on irrigation. USAID are developing the successor of the Zim-AIED (Zimbabwe Agricultural Income and Employment Development Programme) programme which had considerable focus on capacity development at irrigation schemes. JICA have developed irrigation schemes in the past and have been supporting DOI in various ways.
- Civil society – most civil society organisations are considered to fall into the primary stakeholder grouping. The small sample of organisations shown in Figure 1 is representative and includes the Bulawayo Projects Centre (BPC) and the Zimbabwe Farmer's Union (ZFU). The ZFU should ideally be classified as a veto key stakeholder, however its membership base is perceived to be relatively small, as is its influence in investment decisions.
- Government - the Zimbabwe Electricity Supply Authority (ZESA), responsible for electricity supply to schemes with electric motors, is considered a primary stakeholder.
- Private sector – most private sector organisations are classified as primary stakeholders since they are directly affected by the ISI. The investments they make are relatively small and scattered (compared to donors and government) and are targeted at the most profitable niches. Once again, a small sample of companies is shown, including Better Agriculture (BA), Sondelani, Nitriveg and Commercial Bank of Zimbabwe (CBZ). BA, Nutriveg and Sondelani are all currently contracting farmers at irrigation schemes in various areas of the country.

Secondary stakeholders

Secondary stakeholders are those whose involvement in the project is only indirect or temporary. Only examples on civil society and private sector are provided:

- Civil society – GRM International is an example of a development organisation classified as a secondary stakeholder. It's Seeds and Markets Programme (SAMP) is a two-year programme that involves irrigation schemes in Masvingo.

- Private Sector – Exhort and Selby are companies that were previously involved with irrigation schemes, but are nowadays sourcing horticultural produce elsewhere. However, they hold a wealth of information/lessons learn on investing at irrigation schemes.

Other stakeholders

During the interviews there were a good many suggestions made on stakeholders that could be included in the survey. However, due to time and resources it was not possible to consult with all of them. In this section stakeholders that were not interviewed are listed under the headings donors, development partners, private sector, government and knowledge institutes.

Donors

JICA has been involved in irrigation for many years and reportedly assisted in the development of an irrigation master plan, posting an officer within DOI. They may have their own databases.

DOI suggested that other countries, in particular the BRICS (particularly Brazil. India and China), are looking for investment opportunities through country to country loan agreements.

Civil Society

Non-governmental organisations (NGOs), not interviewed, that have reportedly worked with irrigation schemes include Technoserve, IRC, GRM, CARE, PLAN, SNV, GIZ and World Vision.

A number of stakeholders were listed who do would not necessarily make investments, but represent interested parties:

- Farmers – through their unions. WB considers both smallholders (through ZFU) and resettled farmers to be key stakeholders. Other stakeholders suggested that Commercial Farmer's Union (CFU) is an important player.
- ZINWA would have liked to have seen the involvement of Catchment and Sub-catchment councils.

SDC remarked that a visit to Mercy Corp might yield useful advice. Their Agri-Fin Mobile programme is looking for solutions for the ownership of their agricultural knowledge platform.

Knowledge Institutes are not investors and were not considered in the stakeholder mapping exercise. Organisations mentioned by name included ART Farm and various universities.

Government

In order to get the buy-in of government, ensure ownership and sustainability of the planned ISI, WB considers that will be important to convene a meeting with key people – the Permanent Secretary (Dr. Chitsko), DOI Director (Dr. Zawe) and Mechanisation Director (Mr. Muzamhindo). With their support it may be possible to put the ISI on the agenda for budgetary financing through the Ministry of Finance (MoF).

It is considered very important to include references in the study to

- Zim-Asset, the responsibility of the Office of the President; and
- CAADP, overseen by Collen Kabudura within the Department of Economics and Markets.

WB recommends that this consultancy should help government to understand the requirements for an ISI, perhaps targeting a detailed funding request in the next budget?

A number of organisations interviewed thought that the Agricultural Marketing Authority (AMA) should be consulted. Local governments including the office of the Masvingo District Administrator (DA) has developed a 5-year plan for irrigation.

Private sector

A number of companies were suggested including Cairns, FAVCO, Interfresh, Capsicum, Delta, Innscore, Pro brands, African Preserves, Pasela, National Distributors, National Foods, Olivine, Matanutska and Lonrho. Although some of these represent output markets and do not invest in schemes, most would be good sources of information in smallholder schemes.

Other private sector organisations who would be interested in this ISI, but who are not necessarily investors fall within the input market subsector including fertilizer and seed companies, implement manufacturers and irrigation contractors.

Financial institutions mentioned by stakeholders include Stanbic and CABS (implementing the Youth Fund). CBZ thought that Agribank might be the only bank with direct interested in this tool. None of the stakeholders mentioned donor funded facilities – CREATE Fund or Agritrade – a noteworthy omission.

DOI mentioned the private sector in other countries (especially members of the BRICS) including India's WAPCOS.

Layout of this report

The next sections of this report generally follow the order in the stakeholder interview questionnaire (Appendix 1) – demand, database contents, field survey methodology, ISI systems specifications, ISI ownership, administration (maintenance & operation), financing and further information.

For many of these the sections, stakeholders are categorised and dealt with in the order of donors, civil society, companies and government institutions. For some of the questions a rating is used to assess the relative importance of the response provided by stakeholders in the category. Respondents were asked to rate their response from 1-5, where 1 and 5 indicate a low and high level of interest/favour, respectively.

Demand for an ISI

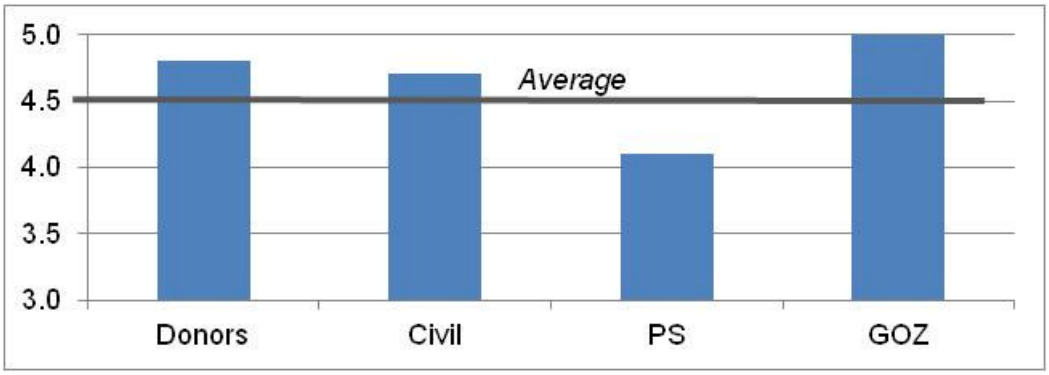


Figure 2 Comparison of demand for an ISI amongst sectors. Rating from 1 (least demand) to 5 (most demand).

Overall all organisations interviewed expressed a high demand for such a system. The Private Sector was the only sector where demand was more subdued with two companies, Selby and Northern Farming, rating their demand as a 3.0. Whilst both companies recognised the usefulness of the ISI, they felt that they could continue without it as smallholder irrigation schemes are not a core part of their business model. Government departments were all unanimous and gave the maximum rating for the ISI.

Usefulness of the ISI for the organisation

There was a difference between the extent to which donors visited were involved with implementation of their programmes and this influenced their perception of the usefulness of the ISI. Some (e.g. DFID, EU) stated that the ISI would not be used internally and interviews with these donors were generally less fruitful. Other donors are more active in their programmes (e.g. SDC, USAID) and are interested in using the ISI to inform future

programming and choices. There is also a difference between the relative importance that donors place on irrigation. EU and SDC are making infrastructural investments in this sector, whereas USAID's investments are primarily focussed on 'software issues.' DFID's current programmes are not focussed on irrigation and any future programming would likely be similar to USAID's activities.

Regardless of the activities that donors were supporting in the irrigation sector, there was general agreement that the ISI would be an important tool for their fund recipients. The two development agencies interviewed (i.e. FAO, and Zim-AIED) confirmed that the database would be useful for the section of schemes. It was unfortunate that this initiative comes at the wrong stage in the programming cycle for both organisations – FAO is currently selecting schemes to support with new EU funding whilst Zim-AIED is in the last stages of implementation, having already made its selection decisions.

Government would use the ISI as a planning and coordination tool, and to prioritise schemes according to investment criteria.

The private sector was represented by four output marketing companies and one financial organisation. All companies have been previously engaged in contract farming activities with farmers at irrigation schemes. The ISI would assist companies in selection of schemes by reduction of costs and risks:

- Cost reduction – schemes with good commercial potential could be readily identified. Costs could be reduced by identifying schemes that are located in areas of strategic interest to companies, and with good infrastructure.
- Risk reduction – schemes where farmers are well organised with a good track record for commerce pose a reduced risk for the private sector.

Selby would be interested in using the ISI to identify schemes where out of season production could be done.

Perhaps somewhat surprisingly, CBZ (representing the banking sector) would not use the ISI directly. CBZ reports that the banking sector, suffering from a lack of profitability in the current economic malaise, is developing cost cutting strategies which include withdrawing from monitoring processes. They are nowadays interested only in the credit worthiness of the client as assessed by collateral cover.

Merits for other sectors

Respondents were asked to list the merits for the four different sectors represented in Figure 1. There were some responses that could be universally applied to all sectors including the ability to make an informed choice through prioritization according to the developmental or profit-making objectives.

Merits for donors

Merits for donors expressed by recipients include the ability to:

- Analyse schemes for strategy development. For example, some donors prefer farmer-owned gravity schemes – the ISI would allow donors to determine how commonplace such schemes are.
- Access current cost estimates for rehabilitation of schemes – related to the above point; to allow selection of schemes with allowable costs.
- Identify intervention areas (e.g. dam siltation).
- Learn from past interventions.
- Compare past development costs – from different donor interventions to allow for improved efficiencies in current programme cycles.

Merits for Civil Society

The ISI will allow for analysis and selection of schemes for development of proposals, or implementation of projects.

Private sector

Merits for private sector expressed by recipients include the ability to:

- Access to information on commodity surpluses and input demands. Output marketing companies need information on the number and type of crops farmers are producing during the year, and the likelihood and quantum of surpluses. Input marketing companies will want to know the potential for input sales for example, a 500 ha scheme requiring inputs and seeds represents a good market opportunity.
- Select the most commercially interesting prospects for investment.
- Explore opportunities, partners and risks. Contract farming history is important information to assess risks.

Government

Merits for government expressed by recipients include the ability to:

- Various departments (e.g. DOI and ZINWA) to make decisions for strategic planning. For example, by understanding the infrastructure and capacity needs.
- Prioritise the schemes with profiles that fall within current development strategies.

- Make informed decision for planning purposes, and timely interventions.
- Identification of leasing and joint ventures on schemes.
- Improved disaster risk management.
- Better coordination of interventions.
- The ability to analyse lessons learned.
- Reduction in costs due to the central availability of information.
- Standardising of primary indicators and information. Information in a database is official and should therefore be of a high standard.

ISI Contents

The consultants informed the stakeholders about seven different categories identified in the literature review – resources at the scheme (water, land and infrastructure), demographics or social-economics of scheme beneficiaries, scheme management, productivity and markets. Respondents were asked to rate the importance of each of these categories, and to specify the fields which they believe need to be addressed under the category, to inform the development of the ISI.

Water resources

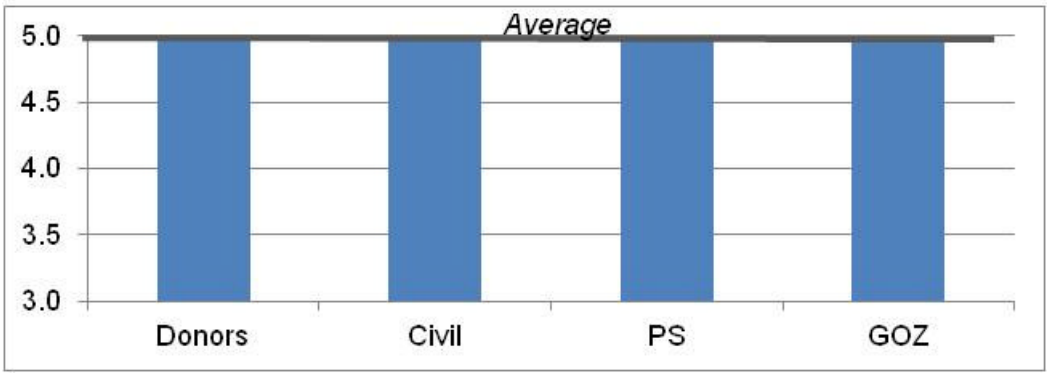


Figure 3 Comparison of demand amongst sectors, of including water resource information in the ISI. Rating from 1 (least demand) to 5 (most demand).

There was unanimous agreement that water is the most important resource that farmers have at their disposal. Data fields listed in this category include type of source, reliability, storage potential of source, location (in terms of GPS coordinates, catchment and sub-catchment) and water quality.

Land resources

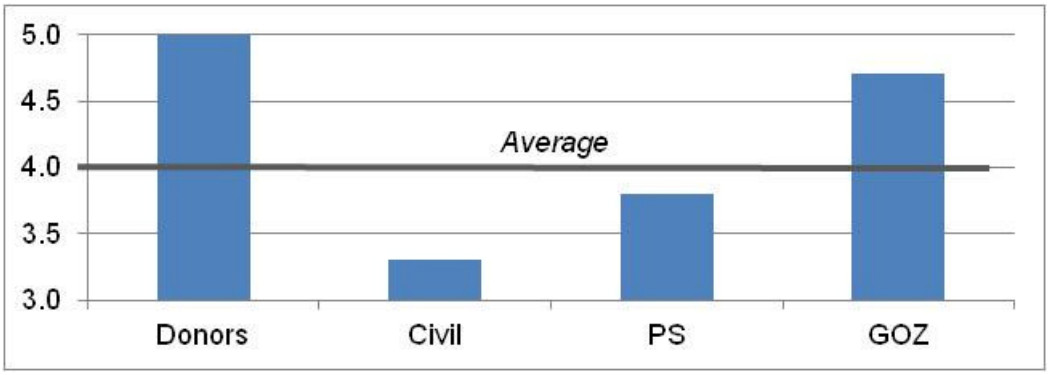


Figure 4 Comparison of demand amongst sectors, of including land resource information in the ISI. Rating from 1 (least demand) to 5 (most demand).

There was slightly less demand to include information on land resources in the ISI.

For USAID information on land resources is important because a larger scheme provides for greater efficiency in use of development resources and a larger potential for impact. A relatively low rating from the NGO group reflects the importance that they place on land resources in scheme selection. NGOs will work with schemes of different sizes and can work around other issues to do with land (e.g. contouring, soil amelioration). There was a significant variation in private sector responses – at the low end was Sondelani with its philosophy of 'working with whatever is there.' Conversely, Better Agriculture and Northern Farming recognise that larger schemes provide for improved economies of scale and that schemes with good soils can produce more efficiently. Better Agriculture are also concerned that farmers at the scheme have access to reasonable land areas to ensure food security as well as cash crop income. Government institutions recognise these issues and place great importance of having this information in the ISI.

Infrastructural resources

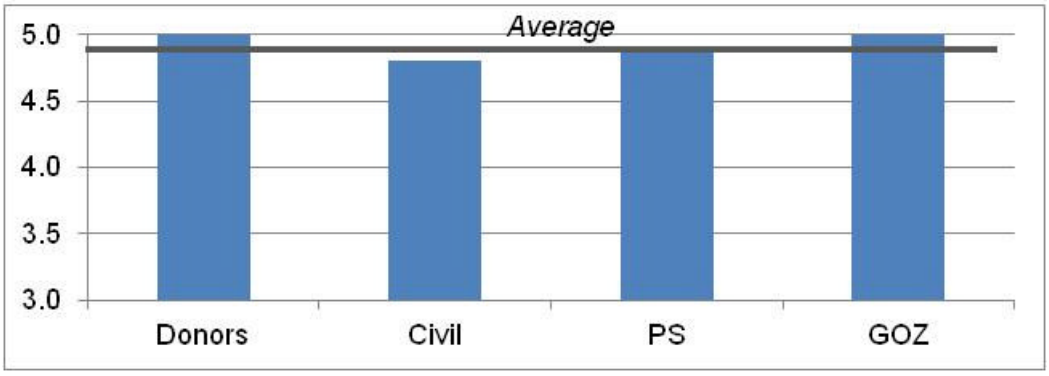


Figure ++ Comparison of demand amongst sectors, of including infrastructural resource information in the ISI. Rating from 1 (least demand) to 5 (most demand).

It was universally accepted that an investor will require information on the type and state of equipment at an irrigation scheme. Both aspects will often determine whether a potential investor will be interested in a scheme. Many donors prefer to concentrate on gravity fed schemes because they do not require pumps or electricity, making them easier to maintain and cheaper to operate. As already mentioned, some donors (e.g. DFID, USAID) will not make large investments into infrastructure, preferring to focus on software issues. Thus, the current status of equipment and magnitude of required investment is also important to donors and their development partners. FAO is also interested in the reasons why rehabilitation is required – these types of questions delve into software aspects dealt with in a later section.

The private sector responses show that these respondents look beyond the condition of scheme infrastructure to the presence and condition of other structures. Better Agriculture require storage facilities that meet with the Health and Safety standards of their international customers. Northern Farming is likewise concerned with storage facilities for inputs and outputs. Ease of access by roads is also of considerable importance for companies that need to minimise high vehicle maintenance costs in today's economic environment. Most companies would prefer schemes that do not rely on ZESA, since frequent power outages lower production efficiency.

Demographics

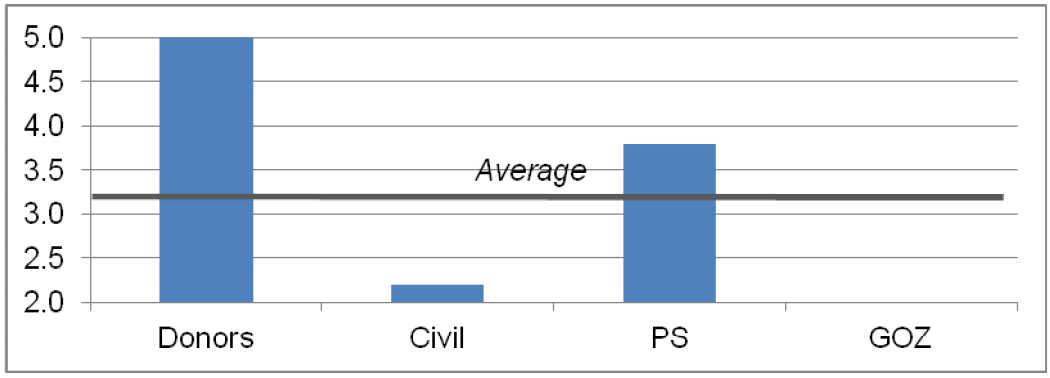


Figure 6 Comparison of demand amongst sectors, of including demographic information in the ISI. Rating from 1 (least demand) to 5 (most demand).

Demographic, or socioeconomics, inspired the lowest level of interest for all seven categories. USAID are interested in being able to view information on youth and gender at the schemes. The location of the farmer household, relative to the scheme was mentioned by NGO and private sector respondents.

Better Agriculture stands out from other respondents in its request for this information since the company reports that it is accumulating evidence that socioeconomic issues affect the risk profile of a scheme. For example, the company has worked at schemes where gender mix or religious influences have affected the outcome. Northern Farming would like to be able to use socioeconomic data to assess availability of labour.

Scheme management

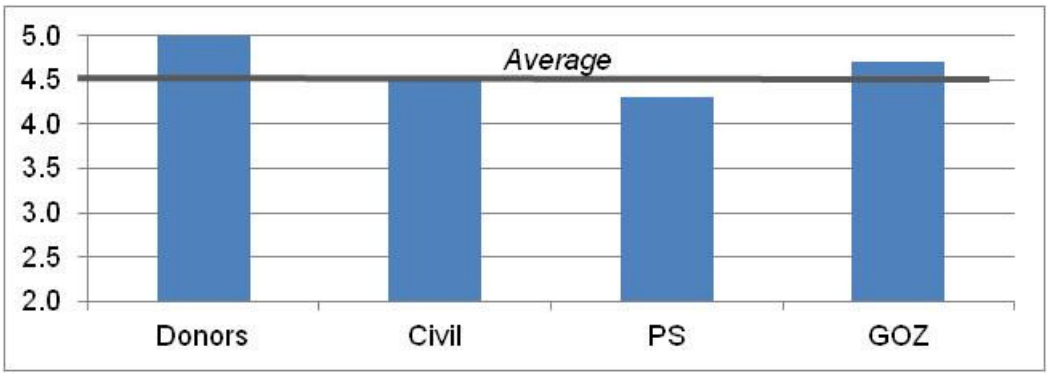


Figure 7 Comparison of demand amongst sectors, of including scheme management information in the ISI. Rating from 1 (least demand) to 5 (most demand).

Scheme management attracted the most discussion from respondents who recognise the importance of this issue. Donors and NGOs are interested in scheme ownership, how farmers manage the scheme and themselves, the management structures that are in place including committees, scheme operation and maintenance, business models and financial management. Some of these organisations are interested in these topics because this is where they specialise in capacity development – for example USAID has had good success in developing these capacities within irrigation communities that it has worked with in its Zim-AIED programme. They would like to see risk assessments on governance, local politics and farmer attitudes since these attributes affect the ability of development agencies to work with communities. Whereas USAID sees schemes with management problems as potential opportunities, other donors (e.g. SDC) would prefer to use the database to identify schemes with good existing management structures as investment opportunities. Perhaps, these two donor strategies could be achieved through a coordinated approach made possible by the ISI?

Most private sector organisations would like to invest in well managed schemes where risks are minimal and there is good potential for highly efficient production. This is key information that the ISI should provide to determine whether this is that case – including indebtedness to service providers. Sondelani would prefer to work with schemes where each farmer is responsible individually for his fees and can operate independently of others. Although this is not possible at most schemes, it highlights the importance of group dynamics at an irrigation scheme for prosperity of the community and other stakeholders. The response from CBZ is different from companies, likely because it is not directly involved at irrigation schemes. The bank believes that these community issues are relatively unimportant because a contracting company will establish its own systems, which farmers will comply with.

Government organisations also rate their requirement for information on scheme management highly, for many of the same reasons cited above. The approach seems more

akin to SDC whereby the ISI would be used to determine schemes where there is a low level of risk, and where management is not a major problem.

Productivity

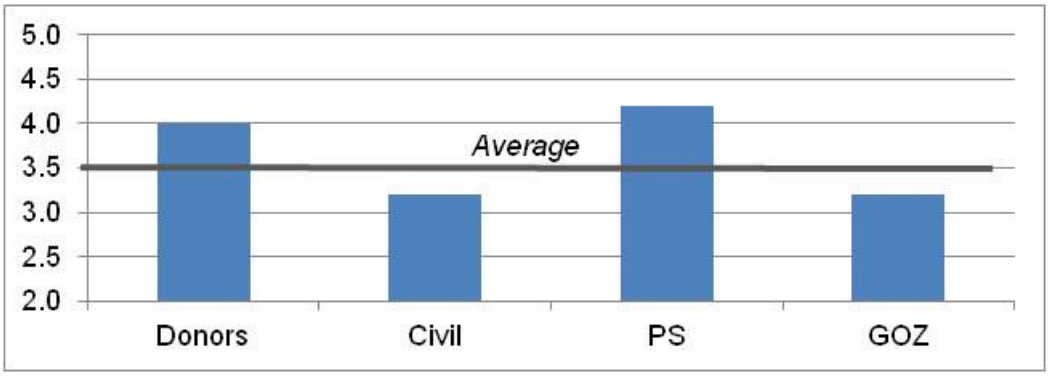


Figure 8 Comparison of demand amongst sectors, of including scheme productivity information in the ISI. Rating from 1 (least demand) to 5 (most demand).

USAID and development partners are not so concerned about productivity. The USAID transformative programming approach has resulted in big increases in productivity. Although it is easier to have more immediate impact for generating big returns if farmers are currently growing high value crops, USAID would not exclude schemes growing wheat or maize. These schemes would represent good potential for impact. FAO and Better Agriculture would like the database to record trends in production in recent years – for example, a private sector contract might have resulted in higher productivity.

Most companies are in agreement that productivity can be increased through their interventions. Northern Farming would like information on the capacity of Agritex at the scheme since capable officers can be a great resource, reducing company costs.

Marketing

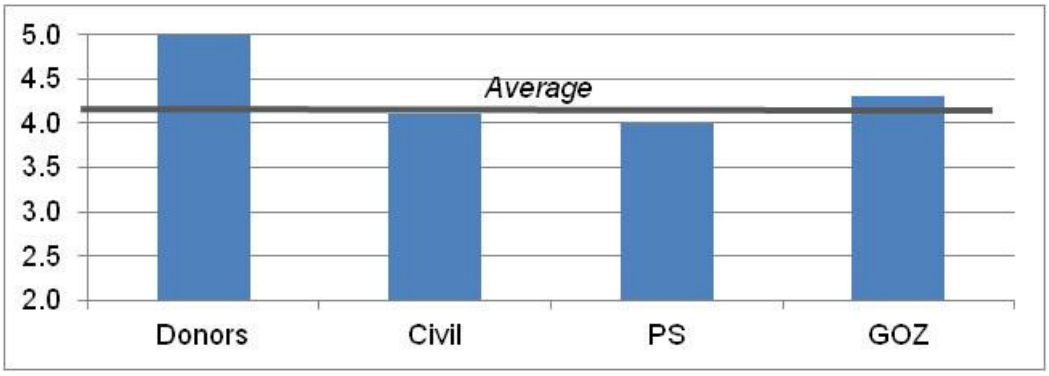


Figure 9 Comparison of demand amongst sectors, of including scheme marketing information in the ISI. Rating from 1 (least demand) to 5 (most demand).

Donors are concerned about market access for farmers because it holds an important key to scheme sustainability. The EU, with its previous SMIDSP (Smallholder Micro Irrigation Support Programme) experience, found successes in market development to be elusive. On the other hand, markets represent the starting point for USAID, which as described earlier, focuses more on the software issues. For USAID, markets inform decisions on the crops that should be grown, the land areas that should be grown etc. USAID consider consistent market demands/access to any markets to be of primary importance – whether they are local, nearby towns, local farmers markets or export markets are critical. The history of market access by smallholders at schemes, and current involvement of markets or supporting institutions is also important information for USAID.

Donors demand from development partners to increasingly focus on market development. Markets have been a cornerstone for the Zim-AIED programme, and are important for the new FAO irrigation programmes funded by the EU and SDC.

The type of market information required by the private sector is different to that needed by donors and development partners. Companies are more interested in the history of marketing at the scheme – importantly, whether farmers have been previously involved in contract farming, and the results thereof. Such information would include any debts owed by farmers at the scheme, and access by farmers to competing markets where they might side market the produce.

Summary

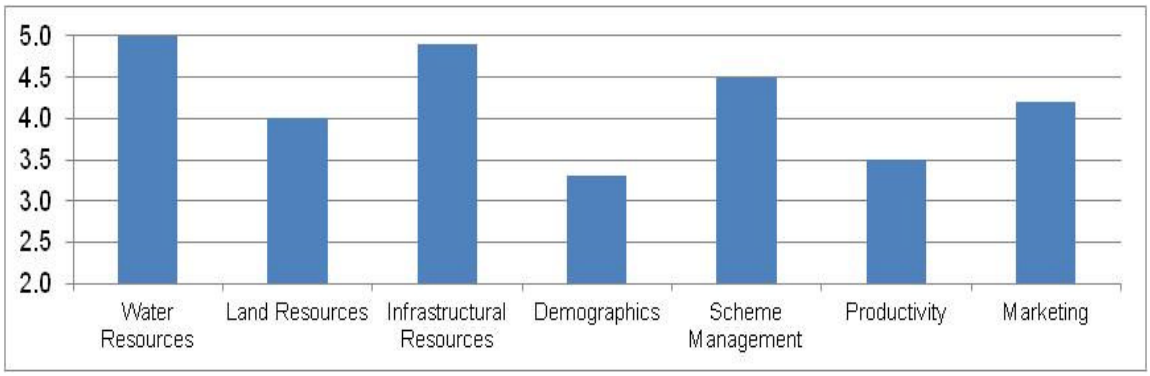


Figure 10 Comparison of non sector-specific demand for information categories in the ISI. Rating from 1 (least demand) to 5 (most demand).

Figure 10 shows that greatest and least demanded information categories are water resources and demographics, respectively. Information on scheme infrastructural resources and management were also considered to be important.

Field survey methodology

It is widely recognised that the ISI will only maintain relevance and value if updated regularly. In order for this to happen there is a need for the manager who will oversee a number of activities including data collection, data capture and quality control (i.e. monitoring).

This section compiles responses to questions asked during the stakeholder interviews concerning field survey methodology. Respondents were asked to provide their views on data collection strategies, the identity of the data collecting agencies and field methods.

Strategies for data collection

Data collection is an expensive operation and would need to be done in a cost efficient manner. There were two main suggestions from respondents – data collection concentrated within a relatively short period, or data collection on a rolling basis. The latter method would involve sampling a portion of schemes every quarter so that over a period of year all of them would be sampled. This would require a full time team sampling throughout the year. Ultimately the choice would depend on cost and implications that the system might have on quality – a full time rolling team might gain more experience and be more accurate than a team involved in a shorter term effort.

Another consideration was that separate data collection instruments could be designed for information that changes quickly, and that which does not. Quickly changing information (for example productivity/scheme management) could be collected annually whilst other information (for example scheme infrastructure) could be collected less frequently. This suggestion has considerable merit since it would decrease the volume of data requiring collection.

Identity of the data collectors

Options for include data collection by a, government agencies, dedicated teams or a hybrid solution.

Government agencies

The obvious identity of government enumerators would Agritex or DOI staff. Agritex have officers posted at nearly every scheme in the country whilst DOI are represented at the provincial and sometimes district/local level. Agritex undertake annual crop assessments and would be well placed to undertake this work.

Over the years DOI have administered over 10 questionnaires, most recently for the Water Sector Investment Analysis (WSIA).

Problems with government collection of data could include:

- Quality of data if field collection is reliant on poorly motivated and remunerated staff. Agritex field officers are often driven by incentives.
- Capture of data into a central database. ICT could provide a solution to this problem.

During the interview with Agritex, respondents stated that this data collection should ideally be outsourced; however, that Agritex officers would be able to do the work if trained. Non-governmental respondents thought that, in the event that ownership or administration was with an organisation outside of government, collection of data by government would keep them involved and informed.

ZINWA point out that there is potential in government which should be exploited and well-managed. The Meteorological office and ZINWA are typical examples who have developed data bases.

Private sector team

This option would be considered if private sector owned and administered the database. A dedicated team of specialist enumerators would visit schemes to collect information. This would likely be an accurate, but not a cost effective way of collecting information.

Multiple source collection

This refers to a Wikipedia-type scenario which was considered by a few respondents to be a potentially very efficient mechanism of data collection. There are many stakeholders that work with irrigation schemes including government, development partners and private sector; it is possible that such organisations could capture and upload information into a central database.

On the downside, it might be difficult to assure the quality of data from multiple sources and carefully monitoring would be required. However it might be possible to have a number of different contributors if a strict format was enforced – such data could then be sent to the team responsible for data capture.

Methods of data collection

Donors support the notion of sourcing information from farmers, but are undecided of how this might be done successfully. USAID makes an important distinction between the type of information that can be successfully sourced from farmers, from information that is more difficult to access reliably.

- Easy to source farmer information: Information can reliably be asked on resources, productivity and markets. For example, farmers will be able to provide information on the reliability of water supply, the current status of the irrigation equipment or the markets that have been used in the past.

- Difficult to source farmer information: As discussed, questions on governance, politics, and attitude are more difficult to gain and prone to interpretation.

  Questions asking farmers for their opinions can sometimes yield suboptimal responses if farmers are not equipped to understand all of the options. For example, questions answered on the future development of the scheme might not provide the best solutions. USAID believes that farmers who have had their capacity developed by transformative training are better placed to answer such questions. Another example – farmers trained in farming as a business would be better placed to provide optimal answers on the business case for producing high value crops. The USAID experience is that farmers are often more comfortable with continuing the status quo of pursuing food security, rather than improving their livelihoods through alternative crops.

  Zim-AIED notes that it is important to get information direct from the farmers because information at the district level is often not complete or current.

Bearing this in mind it is evident that a mix of data collection methods might be necessary. Respondents mentioned two classic methods – Focus Group Discussions and Key Stakeholder Interviews

Focus Group Discussions

A FGD interview with the IMC should ensure a good representation of farmers at the scheme. It should always be born in mind that there may be some opinions/facts that remain unsaid in these meetings – especially if there is factionalism within the scheme. Another common problem is that farmers often will provide information on about what they believe the interviewers expect to hear.

Sometimes there are two types of IMC at the scheme – the scheme level and the section level. A decision should be made of how best to deal with this segregation – whether to treat a scheme as one big scheme to divide it and report on smaller sections.

Preparation of the FGD instrument should be done in a way that promotes buy-in and cooperation – giving transparent reasons why information is being collected – that the information is beneficial for irrigators as a sector.

DOI have learned a number of lessons in administering past surveys, primarily that questions must be well thought through. Experience with other surveys has shown that in many cases it was difficult to standardise answers because there were very different responses in different parts of the country.

Key informant interviews

The potential problems with 'unsaid' or incorrect information obtained in FGDs should be corroborated by triangulation through stakeholder interviews. Stakeholder interviews should try to gauge the local and external influences at the scheme.

Key informant interviews may be held with selected farmer representatives, local stakeholders at the scheme, or district/provincial level stakeholders.

- Farmers – Interviewing key farmers can solicit information not readily gained at a group meeting. DOI shared their experiences on difficulties with developing survey methodology for farmers. In a pilot survey tested in Murehwa (at Chitora scheme) identification of the respondents proved to be difficult because the procedure required interviewing of the best, worst and average farmers. Selection of these farmers was subjective and DOI felt that information obtained from this process would not be representative.
- Local stakeholders – there are numerous other stakeholders besides farmers who can provide information for the ISI. The main ones are Agritex and DOI officers stationed at the scheme. The experience or length of time these government officers have been at the scheme should be noted. The influence that local officers have over farmers should also be measured as part of the local dynamics. Traditional leadership might also be consulted.
- District or provincial level stakeholders: Firstly, it is essential that protocol clearance be done before proceeding to the scheme. DOI and possibly the DA should first be consulted at the province/district level before proceeding to the scheme.

  Stakeholder interviews at the district/provincial levels may be done with DA's Rural District Councils (RDCs), catchment council's. These informants can be used to triangulate some of the farmer information. In addition, Sondelani would like evidence from these stakeholders that they support market development and private sector involvement at schemes. It should be noted that information from the district office is often old and outdated.

ISI system specifications

This section of the report focuses on responses made by interviewees on the specifications of the database. Specific questions targeted issues of openness, hosting and accessibility.

Open or closed systems

Generally, all respondents would like the system to be open and universally accessible – with some caveats. Access should be open for basic scheme information and closed for more sensitive information. The definition of 'sensitive' varied from organisation to organisation. Sondelani is concerned that privacy of investors be respected, whilst DOI felt that farmer information such as level of production be accessible on a permission basis. It was also acknowledged that, should access to the database be fee based, then all users would need to register.

Access

This topic related to how the information might be accessed by users. There was unanimity that the ISI should be accessible via the internet, on a website. World Bank recommended that this be a government website. A useful suggestion was made concerning two levels of access – a website for general data and an option to contact the data base manager for more specific or sensitive material.

Hosting

This topic refers to where the database might be located. There are two basic options – a dedicated server within the organisation administrating the ISI, or a remote server in the 'Cloud'. Cloud based storage can be done using 'data centres' owned by the companies that supply database software.

The first option of locating the server with the owner (or administrator) server was a popular choice, largely due to security fears of hosting information in the cloud. There might be a need to educate stakeholders on the security of cloud based databases.

DOI mentioned that they have a 2-4 Tb internal server and a LAN within the building. This centralised server can be connected to the 10 provinces for updating/viewing of information.

Ownership

Government

Many respondents believe that the ownership should be with the government which, according to SDC has a 'genuine and sustained interest in smallholder irrigation.' Such a database should be a 'public good,' as is the norm in many countries. Proponents of government ownership cite the main advantage to be the potential widespread accessibility of the database. However, others were concerned that a lack of IT skills might hamper running and access, a concern echoed in the World Bank's WSIA report (WB, 2013a).

Government itself cites numerous advantages including

- The ISI would be in 'safe hands'.
- Low implementation and maintenance costs due to their existing structures throughout the country. DOI claimed to have irrigation technicians placed at every scheme in the country who are able to administer the questionnaire.
- A centralised database would be easily accessible to all interested stakeholders.
- Data integrity. DOI are confident that they have the requisite skills after successfully working with WB on the Water Sector Analysis in which (1) staff attended a 5 day training workshop (2) staff administered a questionnaire (3) issues constraining access to the database were resolved by debugged.
- Coordination of stakeholders.
- Government is the first port of call for donors.
- Government is responsible for development of policies, planning and implementation.
- Government has technical knowhow.

Government acknowledges that it does have a number of limitations:

- Red tape and bureaucracy.
- Limited technical capacity in some specialised disciplines.
- Limited funds for updating.
- Restricting access to some information.

Government departments mentioned as potential owners included Department of Irrigation, ZINWA, Agritex and Agricultural Marketing Authority.

Respondents suggesting alternatives to government ownership cited a number of reasons including:

- Insufficient capacity to successfully operate and maintain the database.

- Low level of motivation.
- Poor quality of data, low standards.
- Government tendency to politicize ‘everything.’
- Lack of sustainability – could government keep this initiative alive?
- Biases in the gathering and disseminating of information – non-disclosure of information required by investors for decision making.
- Charging of ‘disproportionately high fees,’ as is the case with MSD and ZINWA information.

Civil Society

Organisations with the mandate of collecting and distributing information might potentially own the database. Organisations suggested include the Chamber of Commerce, sector associations, cross-cutting associations, Market Linkage Association, Irrigation Institute of Zimbabwe, Inclusive Business Forum and Farmers Unions.

SDC did not think that the database should be held by an NGO, due to concerns of sustainability. They believe that the NGO sector is enjoying a period of good business which could decline as relations between government and the EU normalise, with the resumption of direct funding of government.

Private Sector

Private sector ownership might be a sustainable model and there was confidence that the quality of data would be good if users were going to be willing to pay for the service. However there was also some concern expressed over the temptation that a company might have to use information to further self-interests.

Some companies felt that private sector would not see sufficient demand to want to even try running it.

Government is concerned that private sector has limited nationwide interest, that it could misuse information and that there could also be difficulties in data access. There is also concern that the profit motivation could result in high access charges. On the positive side, government acknowledge that private sector could be more efficient and effective.

However the bottom line is that government would struggle with the concept of a privately owned ISI. There was also the thought that government would likely level criticisms at a privately owned ISI, questioning the accuracy of the information. However it might be possible for the ISI to be government owned, but run by an external agent (see next section) accuracy.

It is important that the ISI be widely accepted and this could preclude private ownership. Imagine the scenario where government needed information for planning – would it then have to pay for the information? Neither is it likely that government would approve a private company collecting information from schemes around the country. Private sector ownership would also affect data collection since it is unlikely that government would be willing to pay for information collected by Agritex.

FAO

FAO ownership is seen by some as a second rate alternative to government ownership. FAO has the advantages of being well funded, however concern has been expressed that it sometimes fails to maintain the momentum. The example of the coordination database is given which has faltered in recent years.

Quasi-government

Zim Trade or the Zimbabwe Investment Authority were suggested as alternatives due to their mandate to promote investment in Zimbabwe.

Multi-stakeholder platform

This suggestion involves ownership by a multi-stakeholder platform comprising representatives from government, donor, civil society and private sector organisations.

Maintenance and operation

The owner would not necessarily maintain/operate the database. Respondents were asked whether they thought these functions might/should be outsourced by the owner. Such a solution might be a win-win solution for government, eager to own the database, but currently lacking the capacity and funding to maintain and operate it. Government is likely to be hampered for funding until such time as relations with the donor community normalise.

Some of the organisations are uncomfortable with government ownership and believe that if the government did own the database that maintenance and updating by a third party could guarantee accessibility and quality of information.

The continuing discussion looks at the merits of government, private sector and FAO maintenance.

Government

Government would ideally like to control administrative functions. DOI acknowledges that it would likely be necessary for government to outsource operation to a consultancy team which would capacitate the department over a period of 2-3 years. Then DOI could then run the ISI subject to a review. DOI would like to see an external audit system in place to ensure integrity of the data.

World Bank recommends that there should be a dedicated team with the responsibility of updating/upgrading the ISI *within* the DOI.

Private sector

Some respondents expressed unease about private sector operation/maintenance, wondering how they would freely share the information if there was a vested interest. Unless it was a company not involved in the sector – for example Econet – which might provide a good solution.

Civil society

There was a fair amount of support amongst non-governmental respondents for the outsourcing of administration functions to the civil society. One idea was for the establishment of a trust with funding for 5-10 years to host and manage the ISI. Funding could be provided to maintain and periodically update the ISI with an explicit termination clause. Over 10 years the system could be migrated to government. One thought was that perhaps after 10 years the ISI would no longer be needed with schemes generating enough income.

This solution might be necessary for the funding of the ISI, if direct funding of government is not possible.

Those in favour of ownership by some sort of multi-sector platform were also in favour of administration functions being maintained by the platform.

FAO

FAO believe that a good solution might be for government to own the ISI, but for FAO to maintain and operate it. A data analyst could be placed at FAO. FAO could incubate the system, ultimately handing it over to government. This phased approach would increase credibility of the system.

World Bank believe that FAO would be the ‘next best’ option after government.

Financing the ISI

The questions on ownership and administration have their solutions the financial arrangements of the ISI. The following discussion looks at potential sources of funding. An attempt is made to differentiate between financing different components – setting up, running, maintenance, etc. since such finances could come from different sources

Government finance

It is generally acknowledged, by both government and non-government respondents, that government currently lacks the resources to fund the ISI. This situation could change in the short to medium term if government were to include funding for the ISI in the national budget.

Once the ISI resides with government limited funding could be raised from user fees and web site advertising.

It was suggested that government could contribute to some of the component costs of the ISI including data collection and verification – in this regard Agritex was a popular suggestion by respondents.

Donor finance

Most donors would like to see the ISI ultimately residing within government, however accept that there will likely need to be an interim arrangement during which the ISI is owned or administered through a vehicle that can be funded by the donor community.

Direct government funding for the ISI could be done through the ZIMREF Framework, the successor programme to the MDTF. The WB board makes a decision in May 2014 on the design and implementation of this programme. Government would need to apply for funding through the official ZIMREF channels. This approach would have the added advantage of 'crowding' donors around the ISI. Donor support for the ISI was estimated to be required for between 5-10 years if it covered all cost components.

An alternative donor approach would be to embed the ISI in an existing four-year programme:

- SDC are currently designing an irrigation programme to be implemented through FAO (see the next heading).
- GIZ have assured funding through the AISP for the next 3 years.

There is also scope for donor funds to be used to fund certain components of the ISI. Examples include data capture – GIZ could include data capture into the AISP in partnership with others (e.g. Agritex).

It is significant that besides the options provided above, no single donor mentioned the possibility of providing direct support for the ISI.

FAO finance

FAO, with its mandate for coordination, expressed an interest in administering a government owned ISI. They have a number of different budgets to draw from, including the coordination budget that could be used to establish the database.

Private sector finance

It was generally agreed that the high costs associated with developing, operating and maintaining the ISI would make it an unviable business model for the private sector. *The ISI needs sustained public funding*.

Most of the companies interviewed expressed a willingness to pay user fees for information services. Notwithstanding this it is possible that supplemental funding could come from the PS, one the ISI was established which could take a number of years. However the low relative demand would mean that these income streams would be relatively unimportant.

Other resources

Some respondents suggested appending more detailed documents to the database, or alternatively inserting links to source documents on the internet. This would help to increase traffic to the website.

Many respondents made reference to studies and reports, however by the time that this report was submitted not all of them have been made available. This section first lists documents that have been accessed, followed by a list of advice and references to documents not yet available.

Accessible documents

AFDB. 2011. Infrastructure and growth in Zimbabwe – an action plan for sustained strong economic growth www.afdb.org/en/countries/southern-africa/zimbabwe/

IWMI. Not Dated. Rehabilitation of Small-Scale Irrigation Schemes in Masvingo Province Zimbabwe: Analysis of Infrastructure, Cropping and O&M Systems at Fuve Panganai Block C Irrigation Scheme. Irrigation System Analysis Report 1. Emmanuel Mwendera, Johannes Makhado, Patrick Kapila, Pius Chilonda. IWMI-Southern Africa (IWMI-SA), Pretoria, South Africa.

IWMI. Not Dated. Rehabilitation of Small-Scale Irrigation Schemes in Masvingo Province Zimbabwe: Monitoring and Evaluation Framework for Small Scale Irrigation Schemes in Masvingo Province, Zimbabwe. Hélder Gêmo, Mampiti Matete, Hanjra Munir, Pius Chilonda. IWMI-Southern Africa (IWMI-SA), Pretoria, South Africa.

IWMI. Not Dated. Rehabilitation of Small-Scale Irrigation Schemes in Masvingo Province Zimbabwe: Towards a Business Plan and Marketing Strategy for Small-Scale Irrigation Schemes in Masvingo Province, Zimbabwe: The Case of Rupike and Fuve Panganai Irrigation Schemes. Munir A. Hanjra, Pius Chilonda, Gladman Kundhlande, Conrade Zawe. IWMI-Southern Africa (IWMI-SA), Pretoria, South Africa.

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WB. 2013. Zimbabwe: Water Sector Investment Analysis. Full Technical Report. Final - December 2013. ECA, Dorsch International and BCHOD & Partners.

Inaccessible documents

Respondents provided the following advice, or made reference to the following documents.

Agritex report that they have considerable information on irrigation in Zimbabwe.

CREDEF has significant information, according to Pete te Velde.

DOI has considerable information, but for unrestricted access they would need to be official engagement as a key partner. Two databases have reportedly been developed.

FAO developed a farmer-owned inventory about 10 years ago.

Imagen Consulting has a comprehensive spacial database of 1 800 dams throughout the country.

Northern Farming mentioned the Union Project as a good source of information, particularly on Mushandike.

Pro-Africa (who GIZ are supporting) has considerable information about irrigation schemes in Zimbabwe.

SMIDSP. 2010. SMIDSP mid-term evaluation.

Water Mark (Piet te Velde, Bulawayo Projects Centre) has a database of 1500 dams. They are also developing small holder farmer database funded by Oxfam which they suggested could be linked to the ISI. Documents are available for the “Give a Dam” project for 45 dams. Watermark has many designs (approx 50) for small gravity dam/irrigations schemes;

WFP have reports from Watermark on irrigation in Matabeleland.

Zim-AIED has produced many reports which USAID has agreed to approve for public circulation.

ZINWA has a database with basic information on irrigation schemes they service.

The list is potentially endless since many organisations have worked with farmers at schemes throughout the country.

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Appendix 1: Stakeholder interview questionnaire

Instructions for interviewer: Please proceed through this instrument in a methodical manner, recording the responses of the key informant. Pursue all lines of conversation that might emanate from the question, before returning back to the next question. Your records of the meeting will form the basis of your report which should be detailed and accurate since it forms the basis of the business plan and final recommendations.

Background (please give the informant the background of this programme):

WHH/GIZ are funding this study which aims to develop a process and product for an information system of existing irrigation schemes including local level information and farmer knowledge to allow for:

- create an entry point for access to information aiding potential public and private investors in decision making for irrigation agriculture
- a decision tool for the multilevel discussion in the context of a national irrigation development plan

It is anticipated that the three different classes of investor identified as (1) government (2) the private sector and (3) donors, would have different requirements for this system.

For this purpose, WHH/GIZ have contracted a team of consultants that will be responsible for consulting with stakeholders; and identifying the costs of developing such a system and assessing the subsequent viability. To this end they are required to recommend database software and hardware solutions, undertake pilot field surveys to collect data, and develop a business plan for the development, operation and maintenance of the system.

Questions (*the following is a list of generic questions. However you might want to ask additional specific questions from different organisations). Wherever a scale is required it should be interpreted as 1 (least favourable) to 5 (most favourable).*

CLUSTER 1 – INFORMANT NEEDS

A. What would your organisation use this information system for? .

B. What sort of information should be in the repository? For each of the following headings, list the fields that you would like the database to contain and rank them 1-5
    a. Water resources (source, sufficiency, catchment, reliability) .
    b. Land resources (topography, soils, actual/potential area) .

c. Infrastructural resources (scheme including history and technical description, dam, sheds, internal/external roads, ZESA) .
d. Demographics (household size, ages, schooling, asset base, technical/business skills) .
e. Scheme Management (type of management at scheme, how active, financial viability) .
f. Productivity – current/potential (crop type, areas, yields) .
g. Marketing (where are markets? contract farming history, credit history) .

C. Rate the importance of giving local stakeholders (e.g. farmers/community leaders/government officials) a voice in A above. .
D. Ask the informant for their support for this inventory using a scale of 1-5. .
E. Do you prefer an open or closed system? (universally accessible/requires permission) .
F. What do you foresee the merits to be for government, donors and the private sector? .
G. Please suggest other companies, NGOs or other possible stakeholders that may be interested in this inventory?

CLUSTER 2 – OWNERSHIP AND ACCESS

H. Who should own it? .
I. Should the owner also host it? .
J. The potential owners could be government or private sector. [Rate the different options 1-5]. .
K. What would be the advantages/disadvantages of ownership by the different parties? .
L. How do envisage access to the information system? .

CLUSTER 3 – ADMINISTRATION

M. Who should maintain and operate the information system? .
N. Please give your ideas about maintenance and updating? .
O. The administrator would be responsible for (1) registering users of the database (2) providing users with access (3) data capture – entering new data, or updating old data (4) ensuring quality of information posted on the database. Note that the owner is not necessarily the administrator because they might not have the capacity for this work and decide to outsource it to an expert organisation. Who do you think the administrator should be? [Discuss the various options with the informant and rate them 1-5]. .
P. How should the collection of data be done?.

CLUSTER 4 - FINANCE

Q. What options do you see for financing the system? .

R. For each of the following costs, if you have specific financiers in mind please elaborate.

   a. costs of maintenance, administration.

   b. costs of data collection and verification.

   c. cost of IT system.

   d. costs of information services and products.

S. Would you be willing to pay for:

   a. Development of the repository.

   b. Maintenance of the data .

   c. Information services and products.

CLUSTER 5 – ACCESS TO ADDITIONAL INFORMATION

T. Does your organisation have any previous studies or reports about Zimbabwean irrigation schemes? .

U. Do you have relevant material that might provide guidelines on best practice of developing an irrigation data base (e.g. inventories of irrigation schemes, development or rehabilitation of irrigation schemes, agricultural productivity and marketing at specific irrigation projects, water management arrangements etc) that you would allow us access to? Give details. .

V. Would you be willing to allow your information on irrigation systems to be uploaded to such a database for others to use if either (a) you did invest in the scheme, or (b) you did the study but did not invest in the scheme? .

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Appendix 2: List of respondents

Organisation	Sector	Respondent
Agritex	Government	Nyasha Pambirei, Director
Better Agriculture	Private Sector	Martin Bepete, Director
CBZ	Private Sector	Gift Chinyamutangira, Head – ABU Region 1
DOI	Government	Shephard Kadaira Mishek Rupfutse Mutsa Muhambi
DFID	Donor	Anthea Kerr Colin
EU	Donor	Paulina Różycka Head of Section Economic Cooperation and Food Security Joost Bakkeren
FAO	Development Organisation	JC Urvoy Brian Nhlema
Imagen Consulting	Private Sector	Peter Sheppard, Director
Ministry of Finance	Government	
Northern Farming	Private Sector	Lance Kennedy, General Manager
Selby's	Private Sector	Adam Selby, Director
SDC	Donor	Ulrich Mueller Mkhululi Ngwenya
Sondelani	Private Sector	Peter Cunningham, Director
USAID	Donor	John Macy, Economic Growth/Private Enterprise Officer Snodia Chikanza
Watermark	Private Sector	Piet te Velde, Director
World Bank	Donor	Omar Lyasse
ZimAIED	Development Organisation	Joe Sanders, Chief of Party Kuda Ndoro, Deputy Chief of Party Sandi Roberts
Zinwa	Government	Bera Mutacha, Security Manager Charles Nini, Planning Manager Chari Simbarashe, Planning Technician N. Viriri, Hydrology Manager Raham Mugati, Hydrologist Theodore Nherera, Quality Assurance

		Justice Katiyo, Hydrologist