Initial Recommendations for the Social Impact Assessment (SIA) of Investments in Watershed Services Programs

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Executive Summary

Objectives and Rationale for "Minimum Good Practice" Social Impact Assessment (SIA)

The main objective of this paper is to provide recommendations on the social impact assessment (SIA) of investments for watershed services (IWS) projects or programs. The paper draws on an extensive literature on the theory and practice of SIA, on the authors' experiences of applying SIA in other natural resource contexts, and on discussions from a workshop with IWS program practitioners. It can be regarded as an introductory primer on SIA for IWS practitioners.

The paper first sets out the case for SIA as an issue of self-interest for IWS interventions. It is argued that "good practice" SIA will strengthen the design of IWS programs with regards to their social sustainability, reduce their risk levels, increase their capacity for adaptive management, and (if done in a participative way) increase stakeholder participation and ownership of project objectives. IWS projects or programs have some generic characteristics that make it likely that they will have significant social or equity effects. Experience from a range of natural resource interventions, especially those involving competing stakeholder interests, is that IWS programs will generate a mix of negative and positive social or equity impacts, often unexpected ones. There are also likely to be gender effects, which often go "under the radar" since they are not generally monitored.

Like other natural resource interventions, IWS projects should undertake *ex ante* analysis of the risks and potential negative impacts, and develop risk reduction and mitigation strategies that can prevent a social problem from getting out of hand and possibly derailing a project. Risks and negative impacts are often downplayed since project proponents can be reluctant to analyze what might go wrong. Doing SIA properly should be viewed as an investment in risk management that can reduce future expenditures (e.g., due to litigation, approval delays, reputational risk, etc.).

Based on the literature, it is possible to define some "minimum good practice" requirements for self-interested SIA (as opposed to SIA undertaken to meet an external requirement). Minimum good practice SIA can be defined as SIA that is worth doing in terms of the expected benefits. This is not quite the same as "best practice SIA" which runs into budgetary and time problems, e.g., best practice recommends a combination of qualitative and quantitative analysis as a way of triangulating the analysis, but this may be too expensive. SIA should, as a minimum:

1. Provide a good understanding of the intervention and how it will express itself in the social landscape.

Predict positive and negative impacts, and how, via stakeholder analysis, affected stakeholders are likely to respond to the intervention.

2. Have a way of assessing attribution, or more simply, knowing "what has caused what."
3. Develop a credible monitoring plan that provides the basis for adaptive management.
4. Identify mitigation and risk reduction measures following an analysis of the risks.
5. Involve the participation of local and other stakeholders.

In sum, good practice SIA should bring about a more sustainable and equitable biophysical and human environment, and better development outcomes for people and communities (Vanclay & Esteves, 2011). It favors positive environmental outcomes, just as higher social risks prejudice them and increase transaction costs. For this to happen SIA needs to be done to a reasonable or minimum standard and in response to 'self-interest' drivers – otherwise it is not worth doing at all.

Review of Gender and Social Impacts of IWS Interventions

The paper provides a summary of the findings of a commissioned literature review of gender and other social effects of IWS programs (Richards 2012). This review revealed a weak evidence base for either positive or negative social effects of IWS projects due to weak or non-existent social monitoring. For example, there is only anecdotal information about gender effects, which contrasts with an extensive literature on gender and water management issues. Notwithstanding this situation, the literature, written largely by PES/IWS advocates, argues that social and equity effects of IWS programs have been largely positive, claiming:

- Positive welfare impacts for most participants, including modest increases in household income for poor service providers who tend to predominate in upper watersheds;
- Strengthened property rights, since secure tenure is virtually a pre-condition for achieving the water objectives;
- Positive social and human capital effects where projects have involved contractual arrangements between sellers and buyers, and prioritized institutional strengthening – this includes some evidence of empowerment of local stakeholders and their institutions.

Methodological Options for Good Practice SIA

The paper compares four methodological approaches to conducting SIA – 1) "technical SIA," usually conducted by a consultant to meet a regulatory requirement; 2) "matching methods" (involving treatment and control groups); 3) "reflexive comparison" (a "before-and-after" comparison by participants); and 4) "participatory SIA." These approaches were compared against various criteria including attribution, accuracy, participation, cost (to some extent) and underlying assumptions. It was found that each method has its pros and cons, e.g., "reflexive comparison" is cheap but unreliable, while "matching methods" is better for attribution, but is expensive and non-participatory. It was concluded that "participatory SIA" may be the best fit for IWS interventions because it is a generic approach to impact assessment (and participatory project or program design) based on the "theory of change" approach and is applicable to a range of natural resource management situations

Currently the main guidance for participatory SIA is contained in the "Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects" (Richards & Panfil 2011; "SBIA Manual"). While the core of the methodology in the SBIA Manual may be suitable for IWS programs, the SBIA Manual does not provide appropriate guidance for IWS interventions – partly since it was written specifically for REDD+ projects.

However, the management of forests, watersheds, or agricultural landscapes faces similar challenges around competing stakeholder agendas, weak governance or tenure, political economy issues, etc, so that a specifically tailored manual for IWS projects seems unnecessary. It also seems undesirable as it would likely limit uptake of a generic methodology beyond a relatively small group of users. The main constraint to a more generic manual that would be attractive to IWS practitioners is that – due to the fact that to date all applications of participatory SIA have been to forestry projects or programs – available examples for this approach all come from the forest sector. There is therefore a need to undertaken one or more case studies in IWS situations, both to validate the approach in an IWS context and in order to make a more generic SIA Manual more attractive and accessible to IWS practitioners through some IWS examples.

Based on their experience of using participatory SIA over the past two years, the authors also suggest some modifications to the methodology to make it more useful to IWS practitioners, including increased guidance on risk analysis, on the selection and pre-workshop training of workshop participants, and on how to use SIA in large, complex or diverse landscapes.

Recommendations

Based on the above analysis, the main recommendations of this paper are to:

- Present participatory SIA using the "theory of change" approach as an appropriate methodology for IWS projects, but not as it is currently presented in the "SBIA Manual."
- Develop generic guidance on participatory SIA for a range of natural resource interventions.
- Undertake some case studies of applying participatory SIA to IWS projects so that the generic guidance includes some IWS-based examples.
- Increase guidance on some key components of the participatory SIA methodology, especially risk management.
- Strengthen gender analysis by including a gender specialist in the SIA team.
- Help the IWS community define its core values, including the principles by which IWS programs operate and want to be judged. This would help make any new SIA guidance more relevant for the IWS community.

Finally, the paper observes that social monitoring of IWS projects has to date been weak. This means that the social effects of IWS projects, especially gender impacts, are unclear and contested. The characteristics of IWS projects and extensive literature on women and water management imply that social effects have probably been significant, but may have gone "under the radar." Lack of data and understanding of social impacts is a serious constraint to the design of more equitable and effective IWS interventions. Until some methodologically sound social monitoring is introduced, contested views on the social impacts of IWS projects look set to continue.

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1. Introduction and Objectives

Social impacts are the social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society (IAIA 1994). All interventions conducted where people live, or in areas that they use directly or indirectly for their livelihoods or pleasure, ultimately have social impacts. There is no reason why investments in watershed services (IWS) – otherwise known as payments for watershed services (PWS) – should be an exception. IWS projects or programs involve a suite of tools designed to provide incentives to land managers and stewards to change land use practices associated with degradation of watershed quality.

The nature of IWS interventions predisposes them to having social impacts. Social impacts vary across many dimensions. They can be positive (i.e., resulting in desired outcomes) or negative (i.e., undesired outcomes); direct or indirect; intended (i.e., planned for) or unintended (i.e. occurring as an unanticipated outcome of other activities or impacts). A priori anticipation of negative impacts of IWS interventions can buffer projects against potential pitfalls, such as confrontations with stakeholders or unintended consequences of incentives. Thus, the best time to begin planning social impact assessment is in the program design phase. Clear articulation of desired impacts allows projects to track their achievements and convincingly demonstrate proof-of-concept to themselves, to stakeholders, to donors, and to the community of practice at large.

The aim of this paper is to initiate a process for developing appropriate guidance on social impact assessment (SIA) for investments for watershed services (IWS) projects or programs. Drawing on an extensive literature on the theory and practice of SIA, on the authors' experiences of applying SIA in other natural resource contexts, and on discussions from a workshop with several IWS program practitioners,[1] this paper sets out to justify and describe good practice application of SIA in IWS programs. We propose that good practice SIA will strengthen the design of IWS programs as regards their social sustainability (and thus reduce their risk levels) and their capacity for adaptive management through reliable social monitoring. This paper provides a basis for thinking about how to encourage good practice and as an introductory SIA primer for IWS practitioners.

2. An Introduction to Social Impact Assessment

2.1 Social Impacts and Their Assessment

Social impacts are much broader than is commonly perceived and cover a wide range of human-welfare concerns such as gender, health, heritage and culture, as set out in Box 1 (Vanclay 2003).

Box 1: Conceptualizing Social Impacts

Social impacts involve a change to one or more of the following:

- People's way of life – that is how they live, work, play and interact with one another on a day-to-day basis
- People's culture – that is, their shared beliefs, customs, values and language or dialect
- People's community – its cohesion, stability, character, services and facilities;
- People's political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratization taking place, and the resources provided for this purpose;

[1] This was held in Santa Cruz Department, Bolivia on 14-15th June 2012 and attended by representatives of IWS projects or programs in Bolivia, Brazil, China Ghana, Mexico and Peru. These projects are being supported by Forest Trends through the *Scaling up Payments for Ecosystem Services to meet the Global Water Crisis* project funded by the Swiss Development Co-operation (SDC).

- People's environment – the quality of the air and water people use; the availability and quality of the food - they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation;
- People's physical safety and their access to and control over resources;
- People's health and well-being health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity;
- People's personal and property rights particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties;
- People's fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

Note: From Vanclay 2003.

Social impact assessment (SIA) can be defined as "the process of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (i.e., policies, programs, plans, projects) and any social change processes invoked by those interventions" (IAIA, 2003:2). In this vein, all issues that affect people directly or indirectly are pertinent for SIA (Vanclay 2003). Some common misconceptions about social impacts and their assessment are described in Box 2. A large part of SIA is about identifying potential impacts and categorizing them so that their relative importance for decision-making is clarified.

2.2 Justification for SIA

There are many reasons why proponents of interventions should want to conduct SIA on the basis of self-interest rather than due to any external pressures to do so, including:

To prepare for undesired impacts: Most interventions have undesirable social impacts. Knowing what these might be, and how they can be avoided is critical for short- and long-term success of the intervention. Proponents also need to have clear strategies or plans for achieving desired social objectives, reducing social risks, and mitigating potential negative effects.

To reduce intervention-related risks: A core component of SIA is dedicated to the analysis of risks and potential negative impacts, and thence identification of risk reduction or mitigation measures. Risks and negative impacts are often downplayed by projects, and proponents can be reluctant to analyze what might go wrong. Doing SIA properly should be viewed as an investment in risk management – it will reduce future expenditures (e.g., litigation, delays to approval, reputational harm, etc.) by identifying potential problems early on. Reduced risk can also translate to reduced capital costs and increased shareholder values.

To guide adaptive management: All projects or programs require a reliable learning process, in order to inform the on-going adaptation of project strategies and activities to a changing set of issues or challenges. Credible monitoring, including monitoring of community-defined indicators, is key to adaptive management and, critically, to distinguish between theory failure and intervention failure.

To increase stakeholder ownership of the project and its objectives: Depending on how SIA is conducted it can increase stakeholder ownership of the project and improve project-community relationships, thereby also contributing to social sustainability. A basic lesson from the development literature is the need to include local stakeholders in program design, partly since they are best placed to judge how a proposed strategy will play out in reality, and are usually the *de facto* land use decision-makers. Local knowledge can also validate technical survey and model predictions (Harvey 2011).

Because it makes business sense: The 'business' benefits for conducting SIA are widely recognized and include (Esteves et al. 2012):

- Greater certainty of project investments and increased chance of project success;
- Avoidance and reduction of social and environmental risks and conflicts faced by developers and communities;
- Improved ability to identify issues early on, and thus reduce costs and to incorporate unavoidable costs into feasibility assessments and project planning;
- Improved planning for social and physical infrastructure;
- Improved trust between internal and external stakeholders based on a better information flow;
- Improved quality of life for employees making it easier to retain them;
- Competitive advantage through enhanced social performance and corporate reputation.

Box 2: Some Myths about SIA

▸ **Social impacts cannot be measured - therefore they should be ignored**

One can always find an indicator! It may be qualitative, such as the perception of health risks from polluted groundwater. It may be quantitative, as the number of teachers required to raise literacy levels or population influx to a destination tourist facility, but each will have an indicator.

▸ **Social impacts are common sense and everyone knows what they are**

Knowledge is the forerunner of common sense. The disruption of the lives of individuals and communities because of dams and water reservoirs is now well known, but only after decades of social science research (Cernea, 1995).

▸ **Social impacts deal with costs, not benefits, and SIA slows down or stops projects**

Change brings social costs to some and benefits to others. Building an access road to a garbage dump around the town was more expensive, but improved company/community relations and reduced in–town traffic congestion.

▸ **SIA process is not important!**

In fact, it can prove to be the major benefit! Helping an affected population understand, participate in and cope with a proposed action may be the most important benefit of the SIA process.

2.3 A Basic Framework for Undertaking SIA

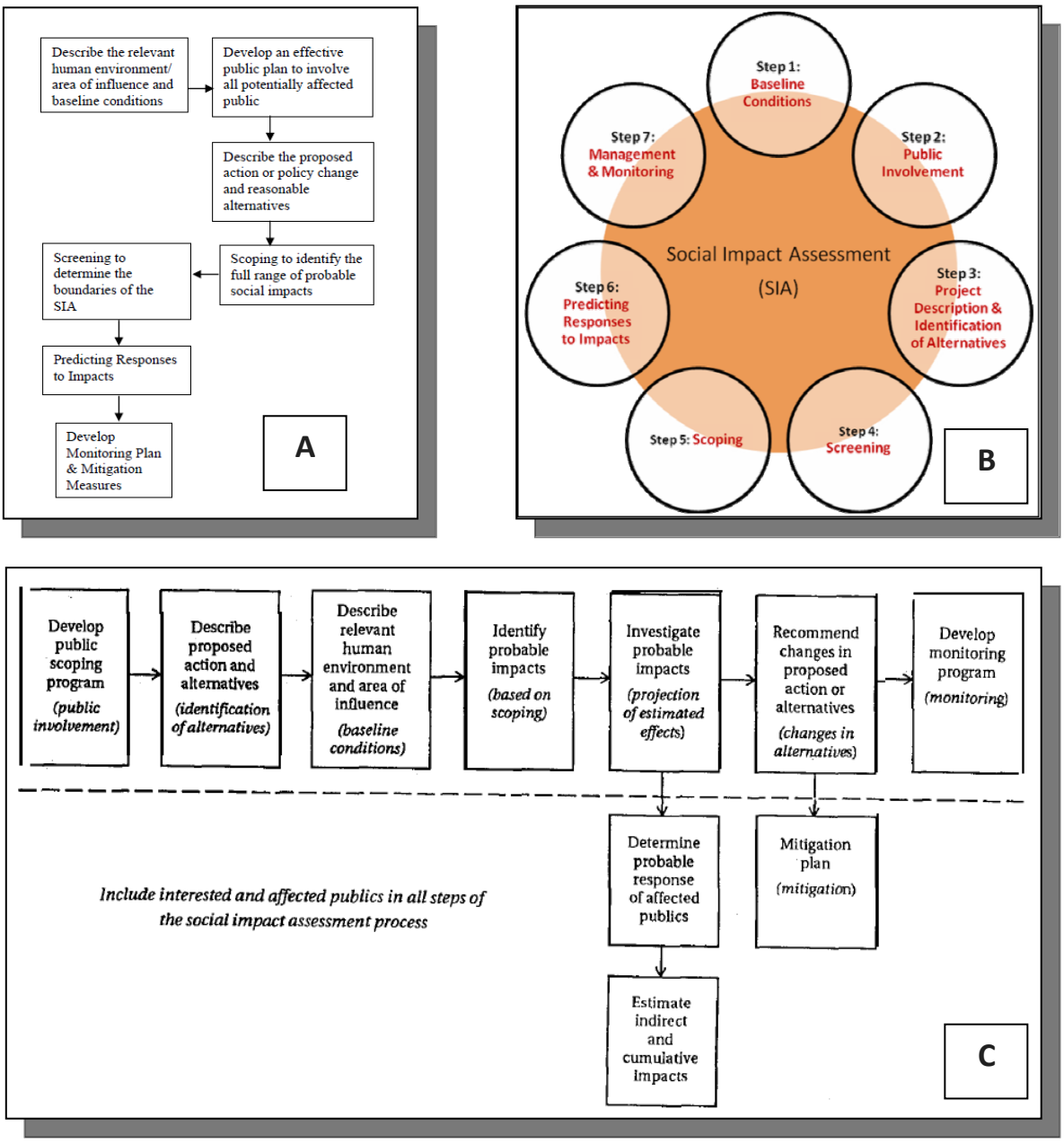
The SIA process identifies alternatives to a proposed action as well as guidelines for benefit enhancement and mitigation of risks and negative impacts (Burdge 2003). In its simplest form, SIA involves defining how a project will affect society, quantifying the extent to which society will be affected, and tracking whether predicted impacts are being realized and – in the case of negative impacts – are being appropriately mitigated. The number of basic steps needed for SIA can be as little as three or as many as ten depending on the scope of assessment (Figure 1). SIA is usually undertaken prior to an intervention, at the design and planning stages (i.e., *ex ante*). But it can also be conducted during the intervention (i.e., 'synchronized SIA') as social monitoring or after an intervention (*ex post SIA*) as an evaluation tool.

SIA is challenging to undertake because it deals with processes and changes that are hard to measure and to be certain what has caused them. Consequently, demonstrating 'attribution' is the main challenge for any kind of impact assessment. Depending on the method used to demonstrate attribution, SIAs can be expensive to undertake. At the same time, spending more on SIA does not guarantee reliability - even sophisticated and expensive studies have been flawed (Tanburn 2008).

Figure 1 presents three ways of thinking about the stages required for SIA. This suggests that there are three basic components of any SIA approach:

- Defining how an intervention will affect society;
- Assessing the extent to which society will be affected by the intervention; and,
- Monitoring whether planned impacts are being achieved, or if not, are being mitigated.

Figure 1. Different Approaches to Conceptualizing the Basic stages of Social Impact Assessment



Sources: A) Misra, 2012; B) Dutta & Bandyopadhyah 2010; C) the Interorganisational Committee, 1993.

Based on Figure 1 and other literature, it is possible to define some minimum or basic attributes of SIA. For SIA to be worth doing in the absence of any external requirement to do it, it should:

1. Provide a good understanding of the intervention: what it entails and how it will express itself in the social landscape.
2. Predict positive and negative impacts, and how, via stakeholder analysis, the affected stakeholders are likely to respond to the intervention.
3. Have a way of assessing attribution, for example, by comparing the 'with' and 'without intervention' scenarios or through causal chain analysis.
4. Develop a plan for measuring or monitoring impacts which provides the basis for adaptive management.
5. Identify mitigation and risk reduction measures following an analysis of risks and potential negative social impacts.
6. Involve the participation of local and other stakeholders.

2.4 'Minimum SIA' and 'good practice SIA': where does 'participation' sit?

There is a fine line between 'minimum SIA' and 'good practice SIA'. For example, some may question whether participation should be defined as part of 'minimum SIA' or 'good practice' SIA. By definition, what is not good practice is not recommended – on the other hand there are obvious budgetary and time limitations to pursuing 'best practice SIA'. Perhaps it is more sensible to refer to 'minimum good practice SIA' – this is SIA that is worth doing in terms of the expected benefits to IWS interventions.

A key question for IWS interventions is whether 'participation' should be part of the 'minimum SIA' package. Both in the biophysical and social fields, there is a trend towards more meaningful involvement of communities in research and project execution, monitoring and evaluation. The combination of expert and local knowledge, and of scientific and traditional approaches, often leads to insightful understandings of systems and how they work (Elbroch et al. 2011). Concepts such as citizen science, local ecological knowledge, and community resource management hinge on the principle that stakeholder participation in all or part of the decision-making process generates interest in the issues that projects are trying to affect and increases levels of commitment to enhancing or resolving them. These principles form the building blocks for the long-term sustainability of projects. Especially if the theory of change approach to SIA is used (see Section 5), weak participation runs the risk that SIA process is insufficiently informed by local knowledge and is deficient in its analysis and outcomes (such as a reliable set of indicators and monitoring plan). This is apart from various other benefits from a more participatory process including increased transparency and co-operation , and that a participatory SIA process links more easily (if required) to negotiation or consent processes, such as free, prior and informed consent (Esteves et al, 2012).

The quality of SIA seems to partially depend on its underlying objectives or motivation. Much SIA is conducted to comply with regulatory requirements imposed by lending institutions or national policies and laws, often as an adjunct to environmental impact assessments. In compliance-directed SIA, a tendency for box-ticking prevails, and analysis and follow-up are limited. Moreover, the SIA outcomes tend to focus on prescription rather than exploration of possibility (Harvey 2011).

At the other end of the spectrum there is a trend towards using SIA as a process for defending the interests of people who may be adversely affected by projects. This newer focus of SIA is partly due to the increased international pressures for free prior and informed consent (FPIC) for indigenous peoples and other resource-dependent communities. Consequently, it can be argued that 'minimum good practice SIA' should incorporate and respect human rights by emphasizing fairness, equality, participation, transparency and accountability, and pay special attention to vulnerable groups.

There is again quite a fine line between 'good practice SIA' and 'best practice SIA.' Esteves et al. (2012) provide a list of the attributes of 'current good practice SIA' but which we might consider 'best practice SIA', some of which may be beyond the budgets of IWS interventions. This is SIA that involves:

i. Developing a process whereby communities are informed about the intervention through the principles of free, prior and informed consent (FPIC) and provided space to discuss and deliberate on the likely impacts of planned interventions, the acceptability of anticipated changes, and their role in the SIA process;
ii. Conducting a thorough stakeholder analysis that provides good understanding of impacted communities in terms of their needs, their aspirations and their interests and how these might differ within and across communities;
iii. Scoping of the key social issues in terms of the significant negative impacts that might occur, and the opportunities for creating benefits;
iv. Collecting baseline data with which to track impacts and changes over time;
v. Forecasting social changes that can be attributed to the intervention;
vi. Establishing the significance of predicted changes – in terms of their importance to affected groups and how communities will most likely respond;
vii. Developing a monitoring plan to track implementation, including of mitigation measures, and unanticipated social changes or impacts;
viii. Facilitating an agreement-making process between communities and projects;
ix. Ensuring that FPIC principles are upheld;
x. Ensuring that human rights are respected;
xi. Ensuring that impact and benefit agreements (IBA) are drafted;
xii. Assisting proponents in drafting a social impact management plan (SIMP) that operationalizes benefits, mitigation measures, monitoring plan, and governance arrangements needed to implement SIMP and the IBA;
xiii. Putting processes in place to enable implementation of SIMP and IBA

In sum, 'good practice SIA' should bring about a more sustainable and equitable biophysical and human environment (Vanclay, 2003) and better development outcomes for people and communities (Vanclay & Esteves, 2011). It favors positive environmental outcomes, just as higher social risks prejudice them and increase transaction costs. For this to happen, however, SIA needs to be done to a reasonable standard and in response to its 'self-interest' drivers – otherwise it is not worth doing at all.

3. Why Do IWS Projects Need SIA?

3.1 Generic Characteristics of IWS Projects that Make SIA Necessary

IWS projects or programs have some generic characteristics which make it likely that they will have significant social or equity effects. Table 1 represents an attempt to analyse some of the generic characteristics of IWS programs[2], and to identify some potential desired and undesired impacts. This analysis, reinforced by the literature review reported in Section 3.2, and experience from other types of natural resource interventions involving competing stakeholder interests (such as forest management), leads us to conclude that there is a high likelihood that IWS programs will result in some negative social or equity impacts, as well as hopefully some positive ones.

Table 1: Some Generic Characteristics of IWS Interventions and their Potential Impacts

Characteristics	Elaboration of characteristics	Potential desired impacts	Potential undesired impacts
Addresses water – a central resource with competing uses	Imbalance of economic and political power among stakeholders affected by water management	Improved water management by improving supply, quality, timing, & location of water	Conflict among competing users given the difficulty of pleasing them all simultaneously; risk of marginalizing some users
Multiple and overlapping jurisdictions manage water	Politically and socially complex set of "siloed" relationships (different agencies deal with different aspects of water)	Improved communication and relations between jurisdictions	Powerful stakeholders manipulate the circumstances for their own benefit
Beneficiaries of (or those impacted by) watershed services are often in a different location to suppliers of watershed services	Difficult for beneficiaries to sympathize with suppliers, or vice versa	IWS are by definition intended to be 'win win' solutions that should address these differences in interest at least in part	Beneficiaries impose their perceptions of what suppliers should do to detriment of local livelihoods (win-lose solution); or suppliers make demands that can't be sustainably met by users
Water-related ecosystem services that are valuable but not currently valued (e.g. water quality, quantity, recreation, biodiversity)	Beneficiaries, typically downstream water users, are often larger, urban and prosperous	Beneficiaries are willing to pay for the 'real' value of the services they obtain or use	Creation of larger disparities between beneficiaries and suppliers
Focuses on natural infrastructure for provision of water-related ecosystem services	Upstream flood control dams to reduce downstream flooding is not an IWS project; upstream communities maintaining wetlands, forest, etc is an IWS project	Natural systems for watershed services maintained - better for biodiversity, and other ecosystem services.	If upstream communities obliged to lower short-term return land uses, increased household poverty and/or difficult to maintain

[2] Apart from the characteristics listed in Table 1, there is often weak technical understanding and data on the relationships between land use practices and water quality/quantity outcomes. This means that there tends to be a high element of 'trust' in IWS programs based on the 'useful myth' of the relationship between forests and water (Kaimowitz 2001). Consequently, IWS programs are subject to varying levels of risk and uncertainty about the delivery of their environmental services.

Characteristics	Elaboration of characteristics	Potential desired impacts	Potential undesired impacts
Development of transparent mechanisms for rewarding providers of services (e.g., incentives, benefit sharing, payments, etc.)	IWS programs often require a social relationship between beneficiaries and providers (negotiated, established by government or water fund third party)	Cohesion and mutual understanding developed between the parties; responsibilities are clear and scope for corruption minimized	Transaction costs of developing and participate in social networks; limited stakeholder participation, excluding women and others with limited time
Incentives may be provided in cash or in kind, and tied directly to the desired behavior change / alternative livelihood strategy	Administered through a plethora of arrangements, including funds, contracts between beneficiary and provider. Financing mechanisms tend to use aggregation mechanism to facilitate transaction	Payments make significant improvements in the welfare of communities and/or households	Payments ignite conflicts on how to use or manage funds; inequitable community distribution; cash payments misused by recipients; women's lack of land rights can limit their benefits
May occur in watersheds where land tenure is not secure or clear	Land managers who can affect watershed services may not have secure title or tenure on the land they manage	IWS programs can strengthen tenure of traditional land managers	Conflicts with (or a threat to) others claiming land rights. Can introduce new conflicts or exacerbate existing ones
Targeting of participants varies widely across programs	Most IWS programs enrol participants without systematic targeting. Larger government programs more likely to do this	Stakeholders who are most likely to impact water service delivery are included	Larger, wealthier land managers disproportionately benefitted compared to smaller, poorer ones.
Although not a part of all IWS programs, inclusion of social goals is becoming more widespread	Explicit objective of poverty alleviation, or less explicitly, e.g., aim make program accessible to poorer, smaller land managers. An element of benefit sharing is implicit in IWS programs (beneficiary pays vs. polluter pays[3])	Improved welfare of marginalized communities or groups; interest and buy-in to program objectives by beneficiaries	Can divert focus (and resources) from water management aspects and increase costs to point at which buyers are not willing to pay;

[3] Possibly excluding the case of 'cap and trade' or water credit trading programs.

3.2 Evidence of Gender and Other Social Impacts of IWS Programs

As part of Forest Trends' *Scaling up Payments for Ecosystem Services to meet the Global Water Crisis* program, a literature review of the gender and other social effects of IWS programs was commissioned (Richards 2012). One of the striking findings of this review was that there is very little mention of gender in the IWS literature, and only sporadic mentions in the broader payments for ecosystem services (PES) literature. In general one can conclude that gender effects have not been monitored. There is only anecdotal information about how women have been affected by IWS programs.

The few references to gender are of low female participation in national PWS programs (Porras et al. 2008). One report from Mexico (Gonzalez Guillen 2004) refers to low female involvement in community and decision-making institutions, and the low proportion of female rights holders. Even where women had rights these were often exercised by non-right holding husbands. It was noted that although women did most of the environmental protection tasks, they tended to receive a small share of the payments. In an economic study from Zimbabwe (Briscoe & de Ferranti 1989), the relatively low capacity of women to pay for watershed services compared to their often stronger concern about watershed services was noted. It was found that women had a 40% higher (than men) willingness to pay for a better water supply, but that their low ability to pay was a barrier to them accessing it.

Why Does Gender Matter for IWS Programs?

In contrast to the IWS and PES literature, there is a voluminous literature on gender and water *management* (e.g., GWA 2006, van Wijk et al. 1996, World Bank 2005). This implies that gender is likely to be a prominent issue in IWS programs. This wider literature reveals three main reasons why gender is important for IWS programs:

- Environmental outcomes are more likely to be positive when women participate more fully. Women have different skills, knowledge and objectives which complement those of men, and their fuller participation tends to result in more favorable environmental outcomes. For example, their concern for family health can lead to them being more effective than men at monitoring water quality (GWA 2006).
- Women are more likely than men to channel any water related income into the nutrition, health and education of their children (Action Aid et al. 2012). Conversely, where gender inequities are greater, growth and poverty alleviation tend to lag according to World Bank (2005).
- If a gender passive approach is adopted there is a high risk that a project will 'do harm' as regards gender effects. There is no such thing as a gender neutral project or policy (Schmink, 1999). Without specific attention to gender the tendency is for existing gender inequities to deepen, and for the gap between rich and poor women to increase.

Gender Challenges in IWS Programs

A major challenge in water management projects is the low participation of women in governance and decision-making (GWA 2006 and others).Poor women are least likely to participate because they face various obstacles to participation. For example, they are less likely to be elected to committees since they don't have the time, resources, education, confidence or transport to attend meetings (van Wijk et al. 1996). They may also face unsupportive social norms. Other challenges include that:

- Women are more vulnerable to falling into poverty, especially female headed households;
- Women usually have very limited *de jure* land rights, while they can be more important than men as *de facto* resource managers. This situation limits women's access to credit, since they cannot use a land title as collateral, and sometimes leads to land use conflicts.
- Women do not constitute a homogeneous group due to their different interests, assets, advantages, marital status, etc.

The gender literature consistently describes a set of measures and actions to tackle gender inequities and empower women. i.e., 'gender mainstreaming'. These measures include gender assessment at the design stage including in

stakeholder analysis; development of a 'gender baseline'; capacity building of women following a needs assessment; improved information provision; facilitation of female participation; gender sensitive monitoring; appointing a gender officer; and staff training (GWA 2006, Poats 2000). It is also noted that for gender initiatives to work, men also need capacity building and education so that they are supportive.

Other Social or Poverty Effects of IWS Projects

In contrast to the rather negative picture that emerges around the likely gender effects of IWS projects, the general view of the IWS/PES literature (such as Asquith & Wunder 2008, Bond & Mayers 2010, Pagiola et al 2005, Porras et al. 2008) is that social or equity effects of IWS programs have been quite positive, although the evidence base for this is limited (Richards 2012). This literature claims that, in general, IWS projects and programs have resulted in:

- Positive welfare impacts for most participants, even without poverty targeting by the projects;
- Modest increases in household income, including for poor service providers who often predominate in upper watersheds;
- Positive social and human capital effects, especially where IWS arrangements have involved contractual arrangements between sellers and buyers, and institutional strengthening has facilitated future projects and services. Some projects have empowered local stakeholders and promoted independence or self-determination, although only when local people have secure access to watershed resources, and interventions have supported rather than undermined existing institutions;
- Strengthened land tenure or more formalized property rights, since secure tenure is virtually a pre-condition for achieving the water objectives.

Several sources, such as Pagiola et al. (2005), focus on the poverty effects of IWS programs. It is clear that poorly designed IWS programs can exacerbate poverty, e.g., in a situation in which watershed degradation is associated with over-grazing or slash and burn farming by resource poor farmers on commons land. It is also clear that where poverty reduction is a major program objective, as in the national programs of Mexico and South Africa, there have probably been some significant poverty reduction effects, but also some trade-offs between social and water objectives.

The distribution and ownership of land is the main determinant of who benefits (Pagiola et al. 2005). In most IWS schemes the service providers own the land or at least have *de facto* rights over it. With some exceptions, such as Mexico, most land included in IWS schemes is state or privately owned . The lack of a land titles, high transaction costs resulting from complex application procedures, and limited project outreach limit participation of the poor (Pagiola et al. 2005). While non-participation of the poor may not affect absolute poverty levels, it can increase rural inequities. Non-participation can also be a problem on the buyer side - the poor may not be able afford to pay for better watershed services which they are often more dependent on compared to wealthier water consumers. In order to counter this problem, some Latin American countries, such as Ecuador and Nicaragua, have developed safety nets in IWS mechanisms so that poor households can access clean water (Bond & Mayers 2010).

Athough the landless are often by-passed, some smaller IWS projects have managed to incorporate them due to their greater capacity for local adaptation and innovation (Porras et al. 2008). Also some recent IWS schemes, such as the Rewards for Upland Provision of Ecosystem Services (RUPES) program in Southeast Asia, the Pro-Poor Rewards for Environmental Services in Africa (PRESA) program, and the *Cuencas Andinas* program covering Colombia, Ecuador and Peru, are more actively targeting poor farmers (Bond & Mayers 2010).

IWS can also have a distribution effect from wealthier consumers to usually poorer rural service providers; can benefit poorer upper watershed farmers through the agricultural productivity benefits of improved management practices; and can result in long-term welfare benefits from more resilient ecosystems and restored watersheds (Asquith & Wunder 2008). The payment mechanism can also determine poverty effects. In-kind payment systems are often better for women since cash payments may go straight to the men.

Evidence for Social Impacts of IWS Projects – Summing Up

The main conclusion of this section is that the evidence base for either positive or negative social effects is weak. This is mainly due to the lack of social monitoring and, where it has been carried out, weak methodologies that result in data of limited reliability. For example, IWS projects have not monitored gender effects, or if they have done, the results have not been published. It is therefore difficult to say whether, and in what situations, IWS projects have had positive or negative social effects. But the characteristics of IWS programs make it highly likely that there have been significant social effects, including gender impacts. Until sound social monitoring is introduced, contested views about the social impacts of IWS projects seem set to continue.

4. Methodological Options for Conducting SIA

Various guides to SIA exist, but they tend to be limited to describing what needs to be done (i.e. the steps for SIA) (Figure 1) rather than how it should be done (i.e., the methodologies). Manuals or step-by-step guides are scarce. A simple search on Google produced only four manuals:

- 'Manual for Social and Biodiversity Impact Assessment of REDD Projects' (Richards & Panfil 2011)
- 'SIA: a Module (Draft)' (Anthropological Survey of India 2006)
- 'Community Impact Assessment Manual' (Department of Transportation of Illinois 2007)
- 'User Guide to Poverty and Social Impact Analysis' (World Bank 2003)

In addition to these manuals, the 'International Handbook of SIA' (Becker & Vanclay 2003) provides conceptual and methodological advances in the field of SIA that are very useful for SIA practitioners and researchers, but this may be less accessible for project proponents.

It can be noted that many of the guidelines or manuals for SIA are quite intervention-specific (e.g., for mining, for planning and development, and for policy analysis) or social issue-specific (e.g., for assessing gender impacts, health impacts, cultural values, etc.). This makes sense given that the level of analysis required depends on the reasons for undertaking an assessment, the type of assessment needed, the values and principles of proponents, stakeholders or lending institutions, and on the communities and the culture in which the intervention occurs. The job of the SIA professional is to identify which methods are most appropriate given the budget, time and other constraints. More recently, the SIA community has placed increasing emphasis on the use of multiple methods and triangulation using different assessment techniques (Fenton et al. 2003).

From the literature it is possible to identify four main methodological approaches to conducting SIA:

- 'Technical SIA' (or what might be called the traditional approach to SIA)
- 'Matching methods'
- 'Reflexive comparison'
- Participatory SIA

'Technical SIAs' are conducted by trained professionals following clear guidelines, typically for large infrastructure development projects such as for mines, highways, and hydropower stations. They are almost always compliance-driven, required either by government or by lending institutions (e.g., the World Bank or the donors such as Danida, Norad, SDC, etc.), or both.

'Matching methods' represent a more quantitative approach to demonstrating social impacts based on the experimental or quasi-experimental method This set of methods require a statistical comparison over time between treatment (or project) and control groups. They face various challenges including around the identification and maintenance of controls (Box 3). Due to their complexity and cost they are usually conducted by, or in collaboration, with academic institutions.

Box 3. Matching Methods

The essence of matching methods is a statistical comparison between control and participant groups. Controls are non-participants with similar observable characteristics to participants (e.g., age, income, education, gender, etc.). It can however be difficult to find 'good' controls: while observable characteristics may be similar, there may be different unobservable characteristics (e.g., attitudes to risk); if they live close by the program there is a risk of spill-over effects, e.g., altered behavior due to obtaining project information; and if they are more distant, they are more likely to be different (e.g., as regards access, ecology, culture, etc.). Other problems with controls include their limited incentive to cooperate, the tendency for people to change their behavior when studied, and an ethical problem - they cannot participate in future program expansion ("once a control, always a control").

The **'reflexive comparison'** approach, a simpler variant of the matching methods approach, is not often used. It is conducted post-intervention, usually to learn about how the project succeeded and where it failed. It depends almost entirely on interviews with people who experienced the intervention, and assumes that they correctly remember the impacts, and are able to distinguish between project impacts and those of other processes occurring simultaneously.

Participatory SIA is an increasingly common SIA approach. It requires meaningful stakeholder involvement beyond 'consultation' (as used in the traditional or technical SIA approach). At one end of the spectrum, participatory SIA consists of stakeholder-led assessments conducted to self-inform communities as part of an adaptive management process.

Table 2 represents an attempt to characterize these four SIA approaches against some 'good practice' characteristics of SIA. It can be noted that missing from the list of attributes in Table 2 is cost. This has yet to be determined for each approach, although 'matching methods' are almost certainly the most expensive approach and the cheapest is probably 'reflexive comparison', with technical and participatory SIA somewhere in between. As noted from Table 2, no single approach is perfect across all the attributes. Each method has its pros and cons, for example, the reflexive comparison method may be cheaper but is quite unreliable. Therefore project or program proponents have to decide on the best approach for them given their objectives, budget and other requirements.

Table 2: Available methodological approaches for conducting social impact assessment

	Technical SIA	Matching methods	Reflexive comparison	Participatory SIA
Who conducts the SIA?	**Expert-led:** SIA professional (i.e., a trained practitioner), a neutral observer capable of making expert assessments. Follows set guidelines and uses expert judgment. Usually an external consultant.	**Scientist-led:** Research team (usually academics) sometimes working together with project proponents. Scientists and field assistants collect data and experts analyze it	**Expert- or proponent-led** Consultant, SIA practitioner, or project proponent interviews communities in impacted area after intervention has occurred.	**Proponent-led and/or stakeholder-led:** Different combinations of proponents and stakeholders design and implement SIA. Consultant may be needed to lead process.
How is attribution demonstrated (i.e. that changes observed are due to processes controlled by intervention)?	Expert justification of causal chains between project activities and impacts. May be based on experiences from other projects, and/or logical deduction	Experimental or quasi-experimental approach with statistical comparison of treatment (project) and control groups	Before and after comparison of variables using retrospective information obtained by those who experienced changes	Theory of change approach (i.e., emphasis on causal analysis, and keeping track of carefully selected monitoring indicators
Accuracy and precision of data obtained	Depends on professional's skill in gathering right information, talking to right people, and experience with similar projects.	Very precise – can perform statistical analysis, test for size of effect, and statistically block effect of confounding variables.	Imprecise and unreliable because depends on memory recall. Could be improved via large sample size and triangulation	Mixture of 'hard' and 'soft' data, anecdotes, and estimates; requires input from experts, triangulation, and participation of wide set of stakeholders

Degree of stakeholder participation	Low to medium: Stakeholders consulted in interviews, group discussions, public disclosures; surveys used to capture wider opinions. Their inputs may or may not be included in decision-making	Low: Participants in experiment contribute pre-determined specific data; only the average responses count.	Low to medium: Participants provide information through a pre-determined process (interviews). Questionnaires are prepared by experts.	Medium to high: Stakeholders involved in some/ all stages of SIA, including identifying impacts, mitigation measures, indicators. Degree of involvement depends on skills/literacy levels
Responsibilities for project success	Proponent is responsible for carrying through most (if not all) aspects of the impact management and monitoring	Proponent is responsible (stakeholders merely react to interventions).	Project already passed, but proponent may feel need to mitigate negative impacts to improve local approval, or due to regulations	Shared responsibilities, stakeholders identify how they will contribute to common objectives
Underlying assumptions	If sufficient data, accurate descriptions can be made by impact assessment 'expert'	Control groups are similar to participants, few spillover effects, etc.	Impacted communities capable of distinguishing project impacts from other processes	Affected stakeholders well placed to assess impacts, identify mitigation measures, etc.

5. Participatory SIA according to the Social and Biodiversity Impact Assessment (SBIA) Manual

5.1 Introduction to the SBIA Manual

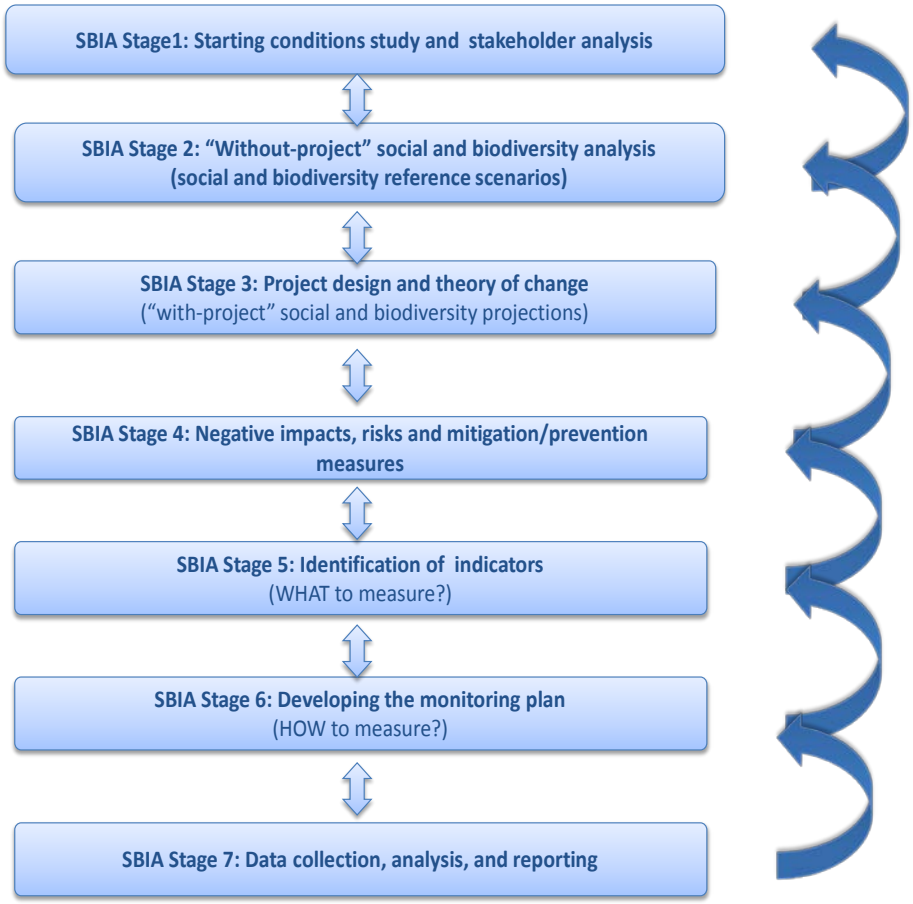
As participatory SIA approach has been developed by Forest Trends and NGO partners, initially to meet the SIA needs of REDD+ projects. The 'Social and Biodiversity Impact Assessment' (SBIA) Manual (Richards & Panfil 2011) was developed following a process of peer reviews and field testing of an earlier version of the manual. The SBIA Manual draws heavily on the 'Open Standards for the Practice of Conservation' (Conservation Measures Partnership, 2007). This is a set of best practice project cycle management guidelines for biodiversity conservation projects developed by leading environmental NGOs in response to the failures of blueprint approaches to conservation. The SBIA Manual represents an adaptation and simplification of the 'Open Standards' approach to the requirements of participatory social (and biodiversity) impact assessment.

The participatory SIA approach set out in the SBIA Manual has been field tested on REDD+ projects in Brazil, Guatemala, Kenya, Peru, Tanzania and Uganda, and training workshops based on the SBIA Manual have been undertaken in nine countries. It is now being adapted to other natural resource management contexts, for example, analysis of the poverty effects of Indonesia's Voluntary Partnership Agreement (VPA) to supply legal wood products to the European Union. This involves assessing the impacts of legal and policy reforms on forest-dependent communities.

5.2 Seven Stages Set out in the SBIA Manual

The SBIA Manual approach involves executing multiple stakeholder workshops in which participants work through most of seven SBIA stages (see Figure 2). The following sections briefly explain these seven stages. At this point it is not being proposed that IWS projects follow the seven stages as presented below. The aim is rather to explain the participatory SIA approach as set out in the SBIA Manual in order to (a) assess how well it meets the basic or minimum requirements of SIA, and (b) to consider how it needs to be modified to meet the requirements of IWS programs.

Figure 2. The Seven Stages in the SBIA Manual



Stage 1: Starting Conditions Study and Stakeholder Analysis

The 'starting conditions' study involves an initial or 'baseline' socio-economic description, as set out in various manuals. Projects are advised to focus on variables that the intervention is expected to influence. It is also essential to undertake a comprehensive stakeholder analysis with a particular focus on vulnerable stakeholder groups. At this point in the process a multiple stakeholder workshop is held composed of about 20-30 project stakeholders. These should be as representative as possible, including a gender balance, while also considering the capacity of stakeholders to participate. The workshop participants agree on the project's overall goal or vision and its geographical scope, and then identify the priority social issues. These are social issues or problems that threaten project success and/or are most likely to be affected by the program. They are called 'focal issues' in the SBIA terminology.

Stage 2: Without Project Analysis

Workshop participants then divide into working groups, one for each focal issue. This usually works out at about 5-7 participants per focal issue for 3-5 focal issues. These working groups then develop a 'problem flow diagram' (or 'conceptual model' in Open Standards terminology) of their focal issue (e.g., weak local governance). This involves identifying the direct and underlying causes of the focal issue problem, as well as some potential project entry points or opportunities. The problem flow diagram ensures that the theory of change (Stage 3) has a strong causal basis. Some level of counter-factual or 'without project' analysis is also essential for impact assessment. The working groups discuss what will happen to key aspects of their focal issue, assuming there is no project or program, in the short to mid-term (3-6 years) and longer term (10-15 years).

Stage 3: Project Design and Theory of Change

Based on the problem flow diagram, the working groups then develop a project 'results chain', again in the form of a flow diagram. This aims to reverse the negative factors in the problem flow diagram. In other words, participants discuss and identify what is needed to improve the condition of the focal issue. This is the first iteration of a theory of change for the focal (social) issue.

Stage 4: Risks, Negative Impacts and Mitigation Measures

This stage involves identifying what could go wrong with the results chain or theory of change. Participants study the results chain in order to identify where there are risks to successful outcomes, and where a successful outcome (for one objective) may have unintended side-effects in the form of negative social impacts (e.g.,a side-effect of a more effective community committee could be reduced female participation, if an increased workload makes it more difficult for women with children to participate). For each risk and negative social impact, participants assess the seriousness of the potential impact and likelihood of it happening. Mitigation or risk reduction measures are then identified and added to the results chain.

Stage 5: Identification of Indicators

The theory of change method provides a good basis for selecting indicators since attribution is factored in. The best indicators are derived from linkages or assumptions along causal chains between outputs, outcomes, and impacts. In the 'Open Standards' approach, indicators are derived from SMART (Specific, Measureable, Achievable, Relevant and Time-bound) objectives for the most important results in the results chain. Projects should also use community-defined or self-evaluation indicators, since local stakeholders' criteria for success or failure tend to differ from those of outsiders.

Stage 6: Developing the Monitoring Plan

When the indicators have been identified, a provisional social monitoring plan can be drawn up. This includes identifying, for each chosen indicator, how the data will be collected, how often or when it will be collected, who will collect it, where it will be collected, and a rough idea of cost. At a later stage it is advisable to develop a more detailed monitoring plan (see, for example, http://conserveonline.org/workspaces/cbdgateway/cap/resources).

Stage 7: Data Collection, Analysis and Reporting

This stage is undertaken after the stakeholder workshop. The SBIA Manual presents some guidance to projects on how to validate, report, and communicate the data, since this is often a weak link and one that is under-budgeted. There is no point in undertaking a lot of data collection and analysis if the results are not effectively communicated and understood by the stakeholders.

6. Meeting the Needs of IWS Projects: Is a New SIA Manual Needed?

6.1 'Minimum Good Practice' Requirements of SIA

In Table 3, an attempt is made to assess the seven SBIA stages against the 'minimum good practice SIA' requirements set out in Sections 2.3 and 2.4. This indicates that the participatory SIA approach as set out in the SBIA Manual fulfills the minimum SIA requirements. This does not necessarily mean it is appropriate for IWS programs.

Table 3. Assessment of SBIA Manual Approach against SIA Minimum Requirements

Minimum requirements for SIA	How the requirement is met in the SBIA Manual (refer to Figure 2)
1.Good understanding of intervention	Assumes project stakeholders understand intervention or that it can be explained in multiple stakeholder workshop; Stages 3-4 should influence intervention design
2.Predicts positive and **negative** impacts, and how stakeholders are likely to respond	Expected positive impacts should come out of Stage 3 and potential negative impacts from Stage 4. The monitoring system (Stage 6) will also check if they happen. Stakeholder analysis is essential in Stage 1.
3. Has a way of showing attribution	Attribution is factored in mainly via the indicators derived from theory of change analysis (Stages 3 and 5), and to a lesser extent through comparison of with and without intervention scenarios (Stage 2)
4.Develops a plan for monitoring impacts	Social monitoring plan is developed in Stage 6
5. Able to identify appropriate negative impact mitigation and risk reduction measures	The output of Stage 4 is a set of mitigation and risk reduction measures that are added to the results chain or theory of chain
6.Participatory process	The process in SBIA Manual is highly participatory compared to other SIA methods; on-going discussions with FPIC specialists in Indonesia to see how it needs to be adapted to work for FPIC

6.2 Meeting the Challenges and Needs of IWS Programs

SIA Based on Self-Interest Rather than External Pressures

The first main difference between IWS programs and many other natural resource based interventions, such as forest carbon projects, is that conducting SIA is completely a matter of self-interest. There is no external pressure for SIA – either due to a set of standards linked to market accountability and confidence (as in the case of REDD+ projects) or due to the need to comply with national legislation (normally required for mining, energy extraction, roads, etc.). It is clear therefore that, in its current form, the SBIA Manual is inappropriate for IWS programs. If the preference of IWS programs is to follow the participatory SIA process, as recommended here, the guidance needs to respond to an agenda based on self-interest rather than in response to external pressures to do it.

Treatment of Risks and Negative Impacts

Possibly the strongest self-interest of IWS programs is in the potential of SIA to contribute to risk reduction and management. Better understanding of risks and how to reduce or mitigate them is in fact essential for all kinds of interventions. While risk analysis already has a significant place in the participatory SIA approach as set out in the SBIA Manual, its treatment can be strengthened. The most obvious way in which risk is assessed in the participatory SIA approach is through assessing the risks to the achievement of key results in the results chain, and the potential for negative social impacts arising from otherwise successful outcomes (SBIA Stage 4). Treatment of risk using participatory SIA can be strengthened in a number of ways beyond that presented in the SBIA Manual:

- By assessing the relative importance of risks and potential negative impacts through analyzing the likelihood of their occurrence, and if they were to occur, their possible severity.
- By extracting critical causal chains from the results chain and considering the potential for risks to achieving key results in more depth. This can include a 'threats analysis' and an analysis of alternative pathways to achieving the desired results, as recommended in the 'Open Standards' approach (Foundations of Success 2009)
- Possibly by introducing more complex risk analysis tools used by the re-insurance sector, although it is unclear how useful these will be for IWS programs in view of the difficulties of applying a more quantitative approach to risk assessment.
- By presenting some examples of risk analysis.

A second way in which the participatory SIA approach responds to risks is the way that ex ante SIA feeds into strategic program design, at least as regards the achievement of social objectives. If done carefully, this should contribute to assuring social sustainability. Given the strong link between social and biological or environmental sustainability, this should reduce the risk profile of an IWS program.

A third way in which participatory SIA contributes to social sustainability, and therefore risk reduction, is by using participatory methods. This gives stakeholders, including local stakeholders, a role in the design process, thereby increasing stakeholder acceptance and perhaps ownership. It also increases transparency in contrast to more quantitative impact assessment methods.

Contribution of SIA to Adaptive Management

A second main 'self-interest' reason for IWS projects to use SIA is its contribution to adaptive management. In the participatory SIA approach this is about spending sufficient time on the theory of change analysis, and on identifying appropriate indicators. The indicators are the main guide to whether a program is 'on track' to deliver its desired objectives, but it is also advisable to review the results chain (and possibly also the problem flow diagram) at regular intervals (for example, every 2-3 years). This enables the project team to review its understanding of the underlying problems and causative links in solving them based on the experience and understanding from implementation. In particular it will be possible to assess why certain parts of the results chain are not going according to plan, and to work through with a small group of stakeholders exactly where it is not working. It is essential to separate out theory and implementation failure. This will result in adjustments to design, including mitigation measures. It is also important to note that if the program strategy and activities change, the results chain needs to be revised.

Participation: Needs and Challenges

Most contemporary SIA observers advocate participatory methods, for example, Esteves et al (2012: 35) observe that "SIA essentially involves creating participatory processes and deliberative spaces to facilitate community discussions about desired futures, the acceptability of likely impacts and proposed benefits, and community input into the SIA process, so that there can be a negotiated agreement with a developer based on free, prior and informed consent." It is also widely accepted that a basic lesson of development is that primary stakeholders have not been involved sufficiently at the design stage.

On the other hand participation, and especially participation of local stakeholders, unquestionably makes the SIA process more difficult, slow and expensive. Involving local stakeholders requires very careful facilitation. Although there are risks to reduced participation, a possible semi-participatory approach to SIA could be as follows:

1. Initial development of an overall project level problem flow diagram and results chain by project staff and selected key informants. This would provide a basis for identifying a provisional list of focal issues – the social issues or problems that could prevent successful environmental and social outcomes. This would be a useful learning exercise for project staff around the theory of change methodology, and should help them plan and facilitate the workshop.

- Holding community level SIA workshops. Most projects are characterized by considerable social and ecological heterogeneity, and therefore short community level workshops are strongly recommended (similarly to the way that public works programs require a series of community consultations). The most important activities in the community workshops would be to identify critical social problems or 'focal issues', and to analyze these focal issues through problem flow diagrams. For these to be effective, communities should receive some pre-workshop training or orientation involving 'practise' theory of change exercises (Richards & Panfil 2011: 71-72). Representatives of the community workshops would bring the results of the community workshops to a project level workshop.

2. The project level workshop could begin by getting participants to review and critique the problem flow diagrams put together by project staff, and in the light of the community workshop problem flow diagrams. Participants should be encouraged to think about what is missing as regards other important social problems, and whether they agree with the cause and effect analysis. Participants could then prioritize the focal issues, based both on the community workshops and the project level analysis, and divide into working groups to analyze the focal issues (Richards & Panfil 2011: 73-79).
3. The identification of monitoring indicators and development of the monitoring plan could be done by project staff helped by an M&E 'expert'. While local stakeholder participation in indicator selection is highly desirable, it is slightly less vital than their participation in the problem flow diagrams, results chains and risk analysis. The authors would however encourage the use of community level 'auto-evaluation' indicators[4] to complement the theory of change indicators.

A less participatory approach runs the risk of weaker social design and sustainability since the cause and effect logic may be insufficiently informed by local knowledge, perceptions and values, and weakens stakeholder involvement or ownership. In general project proponents using participatory SIA have appreciated the way that the inclusion of stakeholder criteria, insights and understanding has opened the way to innovative or better strategies for achieving the desired outcomes.

Breaking Down the SIA Methodology into Manageable Components

SIA does not have to be conducted as a strict sequence of events and could be broken down, although this involves a risk of increasing costs when the process is spread out, such as the cost of bringing stakeholders back to the discussion table. The SBIA Manual already suggests that Stages 1 and 6 be conducted separately from the other stages. There is also a case for conducting Stages 2 and 3 together, as in the case of SIA studies in Tanzania and Uganda. In these case studies, Stage 1 was conducted mainly by the project proponents; Stages 2 and 3 were conducted in village level workshops, and then Stages 4, 5 and some of Stage 6 were conducted at a landscape level stakeholder workshop. Stage 6 was finalized by the project proponents. When the process is broken up, it is doubly important to share the outcomes of each phase with all the stakeholders in order to ensure that they are engaged in the full process even when they do not contribute to all the individual stages.

SIA for Projects that Are Already Being Implemented

While SIA is most powerful when it is applied *ex ante*, and therefore informs the program design, it can still be very useful when applied to a project that is already underway. The main difference would be that the identification of focal issues and development of problem flow diagram and results chains can be based more on observation, and there will be more confidence in the cause-effect analysis. The theories of change based on this analysis can then be compared with current project strategies and activities. This provides a strong basis for adaptive management and can lead to the modification or addition of monitoring indicators. Participatory SIA conducted in this way can improve stakeholder-proponent relationships, identify common solutions, and help projects in their adaptive management efforts – it is never too late to conduct it.

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[4] Auto-evaluation indicators are those based on participants' criteria of what constitutes for them "success" or "failure" of any given project. It is likely that the criteria of women and men may differ, so it is recommended that some indicators are elicited from women only groups.

6.3 A Participatory SIA Manual for Natural Resource Management?

While the view of the authors is that the *methodology* in the SBIA Manual is largely appropriate for IWS interventions, the SBIA Manual is inappropriate in its present form for IWS practitioners. This is mainly because it was written for forest carbon projects to be able to respond to a set of externally imposed standards. Just at the Open Standards is a generic set of project cycle management tools, participatory SIA is a generic approach applicable to a range of natural resource management situations. Natural resource management, whether of forests, watersheds or agricultural landscapes, faces a similar set of challenges related to competing stakeholder agendas and complex governance and political economy challenges. Prevailing socio-economic pressures, exacerbated by institutional and policy failures such as insecure tenure, lack of inter-sectoral coordination, and weak governance, favor resource degradation, and all interventions must be strategically planned to have a chance of success. A strong ex ante SIA and monitoring system are key tools in the development of robust responses to the forces of natural resource degeneration.

It would be a relatively straightforward exercise to rewrite the manual without reference to REDD+ projects or standards. It is also be possible to write a tailored or 'bespoke' manual for IWS practitioners. The view of the authors, however, is that another tailored manual is undesirable. It would (again) limit the uptake of a generic methodology beyond a relatively small group of users.

The main constraint to writing a more generic manual is that to date all the applications of participatory SIA have been to REDD+ projects, as well as an on-going application to a program aiming to improve forest governance. Therefore the examples available to the authors are currently of REDD+ projects. If some case studies were undertaken in IWS situations, an SIA Manual for natural resource based interventions can be written in a way that is attractive and accessible to IWS practitioners, using examples of IWS situations.

Based on the experience of using participatory SIA over the past two years, the authors also suggest some modifications to the methodology (as set out in the SBIA Manual), and that should make it more useful for IWS practitioners. Rather than the current seven SBIA Stages, the next iteration could provisionally be composed of the following PSIA (Participatory Social Impact Assessment) Stages:

- PSIA 1: Starting conditions study and stakeholder analysis
- PSIA 2: Conceptualization stage, including agreement on the intervention's goal, scope and focal issues, and development of conceptual models or problem flow diagrams of the focal issues
- PSIA 3: Counterfactual or 'without intervention' analysis
- PSIA 4: Development of results chains and theory of change statements
- PSIA 5: Analysis of risks and negative impacts
- PSIA 6: Development of social monitoring plans (including indicators)
- PSIA 7: Data collection, analysis and reporting

A participatory SIA manual written for natural resource based interventions should also provide stronger guidance on the following issues:

- Selection of participants from the various stakeholder groups
- Pre-workshop training or orientation of workshop participants and working group facilitators
- How to manage a combination of village or community level workshops and a landscape or project level workshop (involving an aggregation process from the community workshops), as well as integrating other types of stakeholders (business interests, investors, government, etc.)
- Analysis of risks and potential negative impacts
- How to manage potential conflicts between stakeholders at a participatory SIA workshop

It is important to bear in mind that SIA guidelines should provide advice or direction (instructions) by which to plan a specific course of action and which clarify how it should be done (Vanclay 2003). The development of such guidelines should be based on a set of principles derived from a set of core values. Notwithstanding that it is not being recommended here, if it were decided to develop a tailored set of guidelines for SIA of IWS interventions, this would require the IWS community of practitioners and researchers to define the core values that drive IWS, and the principles by which IWS programs operate and want to be judged. For example, the SBIA Manual described in Section 5 was developed primarily for land-based carbon projects seeking to meet the CCB Standards. It was therefore designed to uphold the principles and values of CCBA while conforming to most of the principles of SIA.

7. Recommendations and Conclusions

The main recommendations of this paper are:

- Participatory SIA is appropriate for IWS projects, but not as it is presented in the SBIA Manual.
- To develop a slightly more generic participatory SIA Manual for the natural resources sector, and one that is based on the 'self-interest' rationale for SIA, rather than attempt to provide tailored guidance for IWS projects.
- To undertake some case study applications of SIA on IWS projects, both to validate the methodology and to provide some IWS examples that can be included in a participatory SIA Manual for natural resource management.
- To strengthen the gender analysis in these case study applications, for example, by including a gender specialist in the SIA team, and by ensuring that the indicators and monitoring plans include gender-differentiated monitoring where appropriate.
- To increase guidance on various key components of the participatory SIA methodology, including the analysis of risks and potential negative impacts; selection and training of workshop participants; and on management of the SIA process in large, highly diverse landscapes.
- For the IWS community of practitioners and researchers to define the core values that drive IWS, and the principles by which IWS programs operate and want to be judged. This would help make any new SIA guidance useful and relevant for the IWS community.

This paper confirms that social impacts are ubiquitous across all projects and interventions occurring in spaces occupied by humans, and are not always positive or desired. Conducting SIA at early stages of project or program design helps identify the social issues that a project should focus on, and therefore provides the basis for a sound project design that minimizes the social risks to success. For IWS programs, SIA can only be justified on the basis of self-interest, and this also effects how it needs to be presented in a manual which is useful and attractive to IWS interventions.

A major principle of good practice SIA is that it should involve communities and other stakeholders in most if not all the stages of SIA (Esteves et al. 2012). Participatory SIA using the theory of change approach seems particularly appropriate for IWS interventions, which usually require large scale community buy-in and need to be socially and economically sustainable for time scales beyond the project period. It may be more cost-effective than other SIA approaches for SIA programs.

Finally the paper observes that social monitoring of IWS projects has to date been very weak. This means that the social effects of IWS projects, especially the gender impacts, are unclear and contested. The characteristics of IWS projects and extensive literature on women and water management imply that social effects have probably been significant, but have gone 'under the radar'. This lack of data and understanding is a serious constraint to the design of more equitable and effective IWS interventions.

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