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Better Decision-Making about Large Dams with a View to Sustainable Development



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Subject	Better Decision-Making about Large Dams with a View to Sustainable Development
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Table of content

1.	Summary.....	2
2.	Introduction	3
3.	In what way can large dams be unsustainable?.....	5
4.	What are the drivers for unsustainable large dam development?	6
5.	How can the development including dams become more sustainable?	9
6.	What can donors do to promote sustainable options?	11
	Annex 1: Possible decision–matrix for an intervention strategy by donors	14
	Annex 2: Phases in decision–making on large dams and good practice assessment...	15
	Annex 3: Sources for a governance context risk assessment.....	16

1. Summary

The purpose of this advice is to provide updated insights to enable discussion on the options and instruments available for a donor, like DGIS, to contribute to more sustainable decision-making on large dams. To that end, the DSU has carried out a study of recent publications, and undertaken expert consultations, on the sustainability, cost-effectiveness and future perspectives of large dams. Experts were selected from different backgrounds (financial institutions, research institutes, consultants involved in decision-making on dams) to acquire an updated view of current thinking about dams and alternatives for more sustainable options. On the basis of the results of that study, the present advice has been developed. It includes some suggestions for policy which DGIS could further develop.

The first observation is that prevention and mitigation of the effects of large dams often falls short, or potentially more sustainable options than dams are not transparently considered, resulting in unnecessary risks. Risks include those of resettlement and human rights, negative effects on ecosystem values, operational and economic performance risks including time overruns. Risk underestimations are likely incentives not to look for alternatives.

The second observation is that drivers for negative effects are not in the first place associated with the absence of tools and approaches to prevent and mitigate risks, but are mainly related to the wider governance context. Especially to be mentioned are:

- neglect of strategic and system-based studies;
- favouring large dams without sound and transparent justification;
- national public governance incapable of correcting this situation.

The advice then looks at how development, where large dams are envisaged, may become more sustainable, considering that alternatives for large dams are becoming more sustainable and cost-effective, and there is increasing discussion about whether many more large dams will still be needed. Thus, the advice lists two possible main donor strategies for improvement. First, to consider putting more emphasis on a fair comparison of up-to-date alternatives before choosing large dam options. Second, to consider shifting the attention to development of a transformative change away from large dams.

In order to operationalise this strategy, donors may consider a decision-matrix. A possible decision-matrix is developed in this advice. It has three main components. First, and upfront, donors may assess the governance context including track record on respect of human rights. Second, donors may assess the capacities for transformative change within public institutions. Where a donor concludes that a governance context has unacceptable risks, and depending upon assessment of the capacities for transformative change, the donor may consider, following the decision-matrix, to not finance the dam proposal but instead support lobby activities to improve governance or to support selected institutions on improved practices for strategic planning. Where the donor considers the governance context to be acceptable, the third component of the decision-matrix suggests to look at the phase of decision-making of the large dam proposal and if good practices of assessment and planning in this phase have been adopted.

In short, donors may use this decision-matrix, or a similar one, to support decision-makers and associated agencies to move upfront from dam pre- and final feasibility design towards

strengthening capacities for strategic decision-making phases. Good practices may be supported by system-based environmental and social assessments, that look at multi-functionality of options (energy, water, food security), different technical options (of dams and other techniques), and assessments of institutional requirements at different levels and sectors, as well as cross-boundary effects.

2. Introduction

Context and purpose

DGIS, the Directorate-General International Cooperation of the Dutch Ministry of Foreign Affairs, is increasingly being asked to participate in the financing of large dams (through financial institutions). In many cases, participation will concern dam rehabilitation, but the expected number of new large dams is also substantial.

Dams are often multifunctional (food security, water, energy supply). So, dams could be expected to contribute to DGIS' general policy objectives, which are aligned with the Sustainable Development Goals (SDGs); in particular goals related to water supply, food security and affordable energy. However, there are strong indications that many large dams do not sufficiently contribute to the SDGs. This is the case for each pillar of sustainable development: economic, environmental (which includes biodiversity conservation) and social (which includes protection of human rights). And, despite the application of environmental and social safeguards, in many cases they still have negative effects on these same goals.

This raises doubts about whether DGIS development funds will be used in a cost-effective way when DGIS participates in the financing of large dams. This also raises questions about the effectiveness of established Environmental and Social Safeguard systems and newer assessment frameworks such as the Hydropower Sustainability Assessment Protocol (HSAP). Often something goes wrong in the planning and implementation process of dams, or there are doubts about it; either in their design, approval and/or implementation. Likewise, results often do not meet with ex-ante expectations or forecasts. Although awareness of this undesirable situation is increasing among donors and financial institutions, and new approaches are being developed, it is not yet fully clear what can go wrong in the planning and assessment process and what the options for improvement are.

The purpose of this advice is therefore to provide updated insights to enable discussion on the options and instruments available for a donor, like DGIS, to contribute to more sustainable decision-making on large dams. This advice may be discussed within DGIS and possibly within the wider donor community as well. To that end, the DSU has carried out a study of recent publications, and undertaken expert consultations, on the sustainability, cost-effectiveness and future perspectives of large dams. Experts were selected from different backgrounds (financial institutions, research institutes, consultants involved in decision-making on dams) to acquire an updated view of current thinking about dams and alternatives for more sustainable options. On the basis of the results of that study, the present advice has been developed. Where expert views diverge, conclusions are cautiously formulated.

Questions for discussion

The leading question for this advice is: what are the options and instruments for donors like DGIS to come to an effective response to proposals of large dams, which will contribute to sustainable development (SDGs)? Sub questions are as follows:

1. In what way can large dams be unsustainable?
2. What are the drivers for unsustainable large dam development?
3. How can the development including dams become more sustainable?
4. What can donors do to promote sustainable options?

Box 1: Governance and good governance in planning and assessment processes

In making decisions (e.g. in design, approval or adjustment of plans), public and private actors make use of assessments to know the expected impacts (economic, social, environmental) of their choices. The assessment results are expected to inform the planning process. Assessments are particularly important for large construction projects as construction results are irreversible. In addition, once the infrastructure has been constructed (ex-post) continued monitoring can be applied to determine the realised impacts and make corrections where needed. The way in which influential actors in such processes behave is called governance. The governance of these assessment and planning processes determines their outcomes. For that reason, countries have procedures that regulate the behaviour of actors in planning and assessment processes. Having such procedures and applying them can be seen as 'good' governance. It is, for example, widely accepted that those leading the assessment and planning process should assure that local and affected communities participate in an adequate way, and that key decision makers assure transparency and accountability (justification of their decisions). Such requirements are not always met. For example, decisions are made without justification or with poorly developed evidence or arguments. Also, despite existing standards related to human rights and consultation processes, local communities are excluded or insufficiently included in the process. Also, the capacities or procedures related to transparency and accountability may not be in place.

Three phases in the assessment and decision-making process lead to financing of large dams:

1. *Strategic planning*: based on an analysis of the need for additional energy / water / food supply, system-based studies are done on a mix of options with dams as one option, ideally with assessments that also cover the social and environmental consequences and the governance context.
2. *Dam pre-feasibility*: once a large dam has been identified as a possible option, strategic studies are initiated for further exploration, including siting studies.
3. *Dam feasibility and design*: once the preferred dam configuration has been selected, more detailed studies are done for the chosen option, including Environmental Impact Assessment (or Environmental and Social Impact Assessment, as many banks say).

These phases show similarity with the phases of the HSAP protocol. However, there are also significant differences, especially in the first two phases. HSAP phase 1 (called early stage) already takes the dam as a starting point and then looks back (ex-post justification). At that stage the dam will likely not be abandoned even if the need cannot be strongly demonstrated. In this approach an ex-ante justification may be applied. Further details on these phases with an overview of good practices for each phase are given in [Annex 2](#).

3. In what way can large dams be unsustainable?

Large dam projects are commonly considered to meet high energy needs in a green and sustainable manner. Large dams are also known to have serious social risk (in particular human rights) and environmental risk (in particular biodiversity), which is why environmental and social safeguards systems today are in wide use. Therefore, much attention has been given to develop assessment and planning processes to identify and mitigate these risks. However, these risks are sometimes still not effectively identified, prevented, mitigated or compensated. Also, and increasingly so, there is discussion as to whether many effects may be prevented by adopting other options, which are more sustainable than large dams, not only from a social and environmental, but also from an economic point of view (i.e. national economy and investor's returns). While specific large dam projects can significantly contribute to sustainable development goals, they may also affect these goals negatively (at least for certain social groups).¹

Both social and environmental effects are often under-estimated while economic and financial benefits are over-estimated. The development and implementation of social and environmental prevention, mitigation and compensation plans is often weak in practice, for example when it turns out to be costlier than expected. The main social and environmental concerns and risks of large dams are:

- the violations of human rights, especially indigenous rights;
- the ability to re-establish sustainable livelihoods following resettlement;
- environmental risks for ecosystem values and impact on biodiversity and fisheries in the affected river basin;
- climate change affecting the hydrology (reduced flows, dry periods, sedimentation risks) and thus potential to meet expected water, energy and food supply objectives;
- economic and financial risks, including the risks of corruption²;
- the high costs of power transmission to, often distant, urban demand areas.

In addition to the complexities of social and environmental risks of dams, many large dams are located in large river basins with different countries involved. This leads to additional risks related to cross-boundary effects and potential conflicts when large dams are constructed. A recent study concludes that in Sub-Saharan Africa cross-border cooperation often suffers from political instability and even civil disorder, creating further constraints for achieving water access agreements across national boundaries³.

Risk underestimations are likely to reduce the incentives to look for other options to meet demand for energy and water. Development banks classify large dams among the riskiest

¹ For instance when local communities lose their lands without adequate free prior informed consent procedures.

² Ansar et al., (in prep). Should we build more large dams? The actual costs of hydropower megaproject development. Energy Policy. Time and cost overruns can be predicted by the size of the dam but the economic context also matters (using an indicator of income), with risks significantly increasing in developing countries.

³ Barasa et al. (2016). A cost optimal resolution for Sub-Saharan Africa powered by 100% renewables for year 2030. Togo and Benin have jointly applied EIA to the Adjarala dam (see <http://www.eia.nl/en/our-work/advisory-reports/099-i>), but this is an exception rather than the rule.

infrastructure asset classes, as they are characterised by substantial cost and time overruns, and present substantial safety risks. A recent study concludes that ‘the larger the dam, the longer the estimated implementation schedule and the higher the relative cost overruns’⁴. While large dams may be a good option to meet a developing countries’ urgent societal demands for water, energy or food supply, a large dam may easily take up to 15 years to meet these demands⁵.

4. What are the drivers for unsustainable large dam development?

Decision-making on dams often underestimates the weakness of the wider governance context

The risks of large dams are intricately related to the governance context in which they are being planned and constructed. What makes large dam projects so problematic is not any individual impact or risk (such as 5,000 people to resettle) but that these impacts and risks need to be managed in a governance context. For example, a weak regulatory framework may lead to insufficient enforcement and financing of mitigating measures. There may be a need to deal with governance systems at different levels, since dams often serve local, national as well as international (regional) and basin-wide interests. Local government is often bypassed by central construction agencies yet they will have to deal with local impacts in the medium and long term. In these contexts, large dams tend to reproduce and deepen existing inequalities between rich and poor, urban and rural, and informal small scale entrepreneurs or producers and large-scale industries. Many large dams are located in large river basins with different countries involved. While there are examples of large basins where dam projects are negotiated through transboundary agencies, such as in the Niger Basin, Mekong Basin, etc. the risks related to cross-boundary potential conflicts is also real.

Most decision-making on dams neglects strategic planning and system-based studies

In different ways, dams are part of larger systems. In the first place, dams potentially have multiple functions, contributing to access to energy, food and water (the so-called nexus view). Dams can also perform a climate change mitigating function. So we are dealing with multiple sectors. Secondly, dams are positioned in a water basin system, where cumulative effects of different interventions are important to take into account. Thirdly, there may be alternative options to serve the societal needs in terms of energy, water and food production, other than large dams. Combining such alternative options may lead to integrated solutions that have more beneficial effect on SDGs than the large dam option.

Most existing studies and assessments of dam projects do not place the findings in a wider, integral perspective of energy, water and food systems. Decision-makers may command strategic studies (e.g. Strategic Environmental and/or Social Assessments), but usually these studies do not take an integral systems perspective through a strategic planning phase.

⁴ Ansar et al., (in prep). Ibid.

⁵ A recent example: the Kandadji Dam in Niger originally due to fill in 2015 has now been planned for 2022.

Box 2: The sequence of improvements in decision-making, but where to start?

All experts consulted for this study seem to share the view that the commonly seen assessment and decision-making processes for large dams is insufficient. However, they do not present a clear solution. Typically, their reasoning is as follows:

- We have a safeguards system, but it is not enough → we need to define the ‘right projects’ and not only ‘doing them right’.
- So we undertake screening at early stages using multiple criteria, but it is not enough → we need to address cumulative effects.
- So we undertake river-basin wide assessments using multiple criteria, but it is not enough → we need to look at alternative strategies to meet societal goals and multiple functions.
- So we undertake a systems approach with multiple options, but it is not enough → we need to address the political level where the choices have already been made.
- So we add a capacity building component to influence responsible agencies, but it is not enough → big dam projects are still not sustainable.

In summary, if the objective is to find solutions that are in the public interest, decision-making about dams is definitely a demanding and complex issue, requiring a multi-sectoral strategic vision and sufficient implementation capacity, awareness of societal needs, alternative options and best practices, quantitative data and models, stakeholder involvement.

Large dams are often favoured without sound justification

The DSU considers that it is important to recognise that a bias in favour of large dams may exist among decision-makers, for different reasons:

- Reliable assessments of alternative options to large dams are not systematically undertaken, and there are known cases where decision-makers were unwilling to have such assessments made transparently. Without such assessments, it is likely that large dams will form the *de facto* outcomes of many planning processes.
- Dams have always been popular among national politicians as well as construction companies and financing institutions. Investment in large infrastructure is frequently cited as a major driver of development. This is currently also stimulated by the fact that large dam projects are able to access finance through climate mitigation subsidies, by positioning dams as being green and sustainable (i.e. as compared to oil, gas and coal fired thermal power plants, in view of the low carbon emissions)⁶. There are several examples of ‘old’ large dam projects that have been revitalized with the help of climate funds^{7 8}.
- The choice in favour of large dams is enhanced by mutual interest between governments, industries, engineering consultants and financial institutions: dams and their development objectives are an effective means for governments and businesses to acquire access to finance.

Increasingly, large-scale infrastructure is said to be seen as an asset class by itself, and therefore promoted by financial institutions looking for long-term and reliable investments. Since the brunt of the financing of these large-scale projects is ultimately carried by states, the risks for private financiers are low. It is suggested that this may create another bias in financial institutions in favour of large dams. This is difficult to substantiate, however.

⁶ There is increasing CDM financing for what is considered “small dams” and many countries like India, China, Mexico and Brazil have greatly “relaxed” legislative and regulatory checks for small dams (Opermann, 2014).

⁷ For instance, at present ECOWAS (economic union of west African states) has planned the development of 7,000 MW hydropower energy and only 800 MW renewable energy in West Africa.

⁸ see <http://pubs.iied.org/pdfs/17580IIED.pdf>

Recently, there also appears to be a shift from multi-purpose designs of dams to dams being developed solely for power generation. Consequently, the decision on the siting of large dams is driven by the maximization of energy supply, and disregards the potential for other functions. This change may be fuelled by the fact that multi-purpose dams are complex and tend not to perform as well as single-function dams. Also, for certain combinations of functions, maintenance during dam operation is more demanding⁹.

National public governance is often incapable of correcting this situation

Especially in developing countries with urgent needs for additional energy, water and food supply, and with remaining potential for large dams to meet this supply, national public agencies often do not have the capacities and/or willingness to correct the bias for large dams or deal with the complexities involved in decision-making¹⁰. Common weaknesses are:

- the lack of adequate data and the (selective) use of these data (e.g. on hydrology);
- lack of capacities to conduct system based assessments and their benefits;
- lack of participative processes at strategic levels (no collaboration between energy, water, food supply, generally dominance by energy sector);
- lack of power or willingness to enforce sustainability requirements coming forward from ESMPs (including human rights).

Among civil society organisations, there is often also a lack of capacities as well as power to influence decisions. In many countries, civil society organisations are not sufficiently organised on the issue of large dams to influence public agencies. There is evidence of social movements or civil society organisations that challenge large dams being met with violence and rules and regulations that reduce civic space.

Political lock-in in favour of large dams is a common situation

The above limitations lead to insufficient justification for the construction of a large dam. The decision-making process is particularly weak at the start, in the phase of strategic planning, when dams are proposed without convincing evidence that the large dam-option is part of an energy/water/food system that is more sustainable than alternative options that may meet the same needs in a better and more cost-effective way. Once key agents in a country have decided to develop a large dam, with or without sound strategic justification, there are insufficient counterbalancing pressures in the governance context that can correct the lock-in on this development option.

⁹ For example, 'of the 147 hydropower projects for which the Arunachal Pradesh government in India has signed memoranda of agreement with developers only one is for a "multi-purpose" project – the 3000 MW Dibang project is referred to as "multi-purpose" because it has a flood moderation component. The rest are all single-purpose hydropower projects' (Baruah, 2012).

¹⁰ Typically, in India the Expert Appraisal Committees under the Ministry of Environment to appraise dam projects has not disapproved a single hydropower project, in other words, there is a "zero rejection rate" of hydropower development projects, in spite of the fact that many of these dams have been contested by environmental groups and/or civil society.

5. How can the development including dams become more sustainable?

If a donor wants to be cautious about dams, first there is need to determine if a proposed dam will serve the needs it is designed for in the way that the developer has promised, and, second, if the impacts that will be felt cannot in fact be completely avoided by choosing other solutions. Both considerations might lead to different, and more sustainable, developments.

Alternatives for large dams are becoming more sustainable and cost-effective

For all functions of dams, alternatives are becoming increasingly cost-effective. For energy supply, the construction of large photovoltaic (PV) systems is taking-off in several African countries, as well as the construction of Concentrated Solar Power (CSP) systems¹¹, wind energy and sustainable biomass. The price gap between different renewable energy sources is closing, and e.g. in India and Zambia recent solar projects have become competitive with fossil prices¹². Increasingly, an energy mix that also includes more sustainable energy sources becomes feasible and can provide part of the required base load, reducing the need for new dams to provide base load.

Alternatives for large scale irrigation, water retention and flood management are also available and show innovations. For instance, for irrigated agriculture, drip irrigation is increasingly used, and for water supply in coastal urban areas desalinization plants are becoming more cost-effective. However, these alternatives do not reduce the need for water storage. There are also options related to ecosystem-based approaches, such as restoring groundwater recharge or utilizing wetlands for water storage and more resilient food production systems based on agro-ecological approaches and management systems¹³.

Benefits of these alternative options include the following:

- they can be more resilient in the long-term, in the face of climate change;
- they can be more manageable in terms of complexity and there is scope for decentralised management, thus less sensitive to governance weaknesses;
- they can have fewer adverse impacts and need for costly mitigation and compensation measures;
- they can require lower initial financial investment and less time needed for construction;
- they allow for direct access to and control over resources and investments by local stakeholders and therefore are likely to serve their development objectives more effectively.

¹¹ The NOOR project in Morocco (€ 565 million) can store solar heat in molten salts up to 4 hours (the proposed Noor Midelt project in Morocco can store solar heat for 8 hours) to produce steam for electricity generation for part of the night.

¹² Selected projects in a renewable energy auction in Peru included 162 MW of wind at an average of US\$37.49/MWh, 80 MW of mini-hydro at US\$46.48/MWh, 184.5 MW of solar PV at US\$48.39/MWh, and 4 MW of biomass at US\$77/MWh. See: <http://carlosstjames.com/renewable-energy/why-the-recent-peruvian-renewable-energy-auction-was-significant-for-latin-america/>; see for the Zambia case: http://blogs.worldbank.org/energy/why-zambia-s-6-cents-more-significant-dubai-s-3-cents?CID=EAE_TT_Energy_EN_EXT.

¹³ Reference by one expert is also made to so-called 3R solutions to improve water supply, including recharge (of water buffers), retention and reuse of water.

Increasing discussion whether many more large dams are still needed

While some experts claim that large dams are the only solution to produce significant energy base loads, and also to be able to store large quantities of water, others argue that alternatives can increasingly meet these specific needs just as well. If dam capacity is needed, smaller dams are often more attractive to investors and policy makers: large dams can easily take up to 15 years and beyond to become operational, while smaller dams (up to 100 MW) normally take 5–7 years. Also, a modular approach could be applied that combines smaller dams.¹⁴ Moreover, some experts state that only a few suitable sites for large dams remain. However, there may still be situations where, if well developed and assessed, a donor decides that a large dam is the most sustainable option, in particular in situations of high growth of urban energy demand where few alternatives exist.

Considering a transformative change away from large dams towards a more system-based approach

Donors may stimulate a transformative shift away from unsustainable large dams, for example by considering dams only when they emerge as best option after applying a systems approach to meeting societal needs on energy, food and water. Transformative change may then be encouraged in two ways: by helping the decision-maker to better assess its options and their impacts before pursuing a large dam, or by bringing into view alternatives that show that large dams are not needed in the first place. The first approach can benefit from recent developments towards more system-based assessments and the possibility for donors to provide capacity building support in line with these developments (see box 3). There are also good practices of the second approach, where more sustainable options successfully compete with large hydropower and fossil energy sources. However, there are few such experiences in 'poor governance' contexts.

Box 3. Good practices of systems-based approaches

Good practices are emerging with systems-based approaches that lead to more sustainable solutions (cumulative effects, indirect effects, basin-wide, multi-level, nexus, ...). Thus, technically, complexity need not be an argument anymore not to invest in a strategic phase of public, transparent and participative decision-making based on sound assessments. Examples of system-based assessments include evaluations of the multi-functionality of dams: can they provide electricity, irrigation and drinking water as well as preserve the ecological functions of the river downstream to counter the impacts of climate change?¹⁵ Have indirect effects on ecosystems and local peoples been adequately addressed? Tools are being developed to carry out strategic, integrated or system oriented assessments, pre-feasibility studies and cumulative studies at landscape, river basin or regional level. These may lead to energy or river basin master plans that look at available alternatives at a system level, and that assess both direct and indirect effects.

¹⁴ Two smaller dams could significantly reduce resettlement, while providing similar project benefits. These smaller dams could be built in different periods as and when needed.

¹⁵ As is the case for the Manantali Dam on the Senegal River in Mali, the Kandadji Dam on the Niger River in Niger and the proposed Fomi Dam on the Niger River in Guinea.

6. What can donors do to promote sustainable options?

Supporting transformative change where possible

Donors may support a transformative change to meet societal needs (energy, food, water), as described above. Where this is not realistic in the short term, donors might look for alternatives to supporting large dams. However, urgent demand for water, food and energy will remain, and a transformative change towards alternative options for from large dams may not be easy and may take time. So what can a donor do?

The DSU sees a number of possible donor interventions that depend on whether the donor thinks there is an acceptable “governance context risk” and sufficient “capacity for transformative change”. (See below for possibilities to assess these two factors). Depending on how these two factors are assessed, the intervention options are:

1. *If they assess governance context risk to be unacceptable*, donors may focus on improvement of governance as an alternative to financing dams. This assessment could be based on the track record on governance, for example, as inferred from the number of human rights violations. In particular the threshold level chosen for acceptability would be a political choice. The transformative impact of the decision not to finance by itself may be limited. In addition, a donor could perhaps have a more transformative influence by supporting civil society to build up pressure, for example on government agencies to respect human rights.
2. *If, in a country, they assess the governance context risk to be acceptable and an assessment shows potential for transformative change*, donors may consider:
 - supporting the implementation of alternatives to large dams that can meet energy, water, food needs, to demonstrate the benefits of those alternatives (in terms of sustainability);
 - co-financing and building capacities on nexus studies in order to provide inputs for strategic planning processes, for which a Strategic Environmental Assessment can be a suitable tool in order to increase transparency and participation;
 - building capacities and stimulate upstream strategic planning based on good studies and assessments.

Potential for transformative change could be assessed by identifying institutions and decision-makers willing to seriously consider new approaches to meeting societal needs.

3. *More in general, donors could consider stimulating understanding of sustainability and cost-effectiveness of large dams, by:*
 - supporting reviews of existing dam projects, learning activities and study tours to countries with good practices on more sustainable options;
 - supporting benchmark studies, on costs and construction time for large dams; costs or land area per kWh generated; human rights violations, people displaced per dam size; success in re-establishing livelihoods etc.

In any of the above options, the donor might pay attention to being consistent and coherent in the position being taken about specific large dam proposals or proposals that influence the need for large dams, in all related sectors of the donor policy and among involved donors.

Adopt a differentiated approach tailored to different phases of the planning and decision-making process

To enable strategic influence, decisions on financing large dams may be moved upstream in the planning and decision-making process, towards phases when other-than-dam options are still possible (see box 1). However, in practice, donors are generally confronted with the large dam project in phases when decisions have already been taken.

A possible decision-matrix for donors

The section above outlines a repertoire for donors to intervene in the planning and decision-making phases in which they are requested to participate. The decision-matrix in [Annex 1](#) shows how a donor might assess the situation in order to determine its interventions. The DSU believes this annex may be a useful start for discussion and for testing by a donor.

Applying the decision-matrix in [Annex 1](#) would require the following set of assessments done by the donor:

1. **'Governance context risk assessment'**: An assessment of the current governance situation where the proposed dam is located. This could be done in a quick way (e.g. using World Bank governance indicators) or a more detailed way (e.g. see the example in [Annex 3](#), with a set of global indices available to assess governance risks).
2. **'Assessment of capacity for transformative change'**: An assessment of the existing capacities with public agencies to transform towards more attention for strategic decision-making, inclusive decision-making processes, the use of assessment tools to support decision-making, and nexus-oriented thinking. The assessment can be made by looking at current capacities and expertise of relevant institutions, absorption capacity, willingness to learn and improve, existing relations between the Dutch Embassy and the recipient country.
3. **'Assessment of the decision-making phase of the proposal'**, with three main questions:
 - What phase of decision-making for the proposed dam matches the proposal: (1) the strategic planning phase, (2) the dam identification phase, or (3) the dam preparation phase? *Note that in most cases this will be phase 3.*
 - Have upstream decision-making phases have been adequately carried out? If not, the donor can consider supporting agencies to develop upstream decision-making capacities. *Note that in most cases this will imply support for carrying out adequate strategic planning and dam identification.*
 - Have good practices been carried out to assure good quality of implementation of the current phase? If not, the donor may consider supporting the adoption of good practices for that specific phase of the proposal. Good practices of each phase are listed in [Annex 2](#).
4. **An assessment of the position of the donor**: What is the position of the donor, what is its sphere of influence and relation with the relevant decision-makers and stakeholders? This may clarify the feasibility of intervention options, and the possible synergy with other donors¹⁶.

The DSU highlights the options that emerge from the application of the possible decision-matrix:

¹⁶ What is generally the position of a donor like DGIS regarding large dam projects? DGIS would often operate on the sideline of such expensive projects (e.g. 500 million USD). There is also a current trend towards having multiple donors for a dam project. As DGIS will be a "minor" donor, it will be buffeted by decisions made (and often imposed) by the lead (often the WB). This exposes DGIS to greater risk than if it was a majority donor and "in control".

- *In the case of assumed unacceptable governance context risk:* the donor may consider not financing any large dams. However, there are options for supporting NGOs and/or decentralised agencies that have a better track record and show willingness to improve their performance.
- *In the case of an assumed acceptable governance context risk but poor transformative capacity,* the donor could support NGOs and research institutes in developing good practices on nexus approaches and finance projects with more sustainable options, to show their benefits and to build local capacities. If possible, the aim is to move attention towards upstream planning and decision-making phases.
- *In the case of assumed acceptable governance context risk and available transformative capacity,* the donor could support government agencies and project proponents in developing capacities on good practices within each of the decision-making phases, where possible moving attention towards upstream decision-making phases as real transformation will take place only if changes are realised at this level. At decentralised level there could be better capacities for supporting transformative change (as compared to national level agencies).

Applying the above strategy for identification of interventions, donors may be expected to gradually receive better-justified and more sustainable project proposals – that include a combination of technologies (renewable, hydro, ecosystem-based, demand based measures) – and meet the societal objectives for energy, food and access to water.

Annex 1: Possible decision-matrix for an intervention strategy by donors

		<i>Assessment 1: Governance situation →</i>		<i>Assessment 2: Transformative change capacity →</i>		<i>Assessment 3: Phase of decision-making of the proposal and if good practices have been adopted</i>	
				<i>Acceptable governance context risk</i>		<i>Unacceptable governance context risk</i>	
				<i>Capacity available</i>	<i>Low capacity available</i>	<i>Capacity available</i>	<i>Low capacity available</i>
				↓	↓	↓	↓
				<i>(Re)consider to:</i>	<i>(Re)onsider to:</i>	<i>(Re)consider to:</i>	<i>(Re)consider to:</i>
Phase 1: System- / strategic planning	Have good practices for this phase been adopted?	→ NO		Support public agencies on phase 1 good practices and promote emergence of nexus projects.	Reconsider finance, support NGOs / research on phase 1 practices, finance any good nexus projects that may emerge.	Not finance for proposed dam. Support selected institutions (e.g. research, basin-based, NGOs) on improved practices for strategic planning, for instance by financing case studies or research. Involve public institutions wherever possible.	Not finance for proposed dam. Support NGOs on lobby activities to improve governance, respect of human rights and their participation in decision making.
		→ YES		Finance proposed next phase activities of the decision-making process.	Provide capacity building to further improve strategic planning.		
Phase 2: Dam pre- feasibility	Has previous phase 1 been conducted satisfactorily?	→ NO		Support public agencies to deliver phase 1.	Support NGOs / research on phase 1.		
		→ YES	Were good practices for this phase adopted? NO →	Support public agencies to deliver phase 2.	Reconsider finance, support NGOs / research on phase 2.		
		→ YES	Were good practices of this phase adopted? YES →	Support proposal and /or proposed next activities of the decision-making process including phase 3.			
Phase 3: Dam feasibility and design	Have previous phases 1 and 2 been conducted satisfactorily?	→ NO		Support public agencies to deliver phases 1 and 2.	Support NGOs / research on phases 1 and 2.		
		→ YES	Were good practices for this phase adopted? NO →	Support public agencies to deliver phase 3.	Reconsider finance, support NGOs / research on phase 3.		
		→ YES	Were good practices for this phase adopted? YES →	Finance proposed proposal. Provide soft financing for capacity and civil society development and to deliver ESMP.			

Annex 2: Phases in decision-making on large dams and good practice assessment

Phase	Description	Good practices of strategic environmental assessments for sustainable results
1. System / strategic planning	A need for additional energy / water / irrigation supply has been identified. Dams are being discussed / there is hydropower potential so dams are a serious option.	<ul style="list-style-type: none"> • Sound and participatory needs assessment, leading to sector- and inter-sectoral master plans and strategies, in the energy sector these include energy baseload issues and whether the power network is available • System-based environmental and social assessments, that look at multi-functionality of options (energy, water, food security), different technical options (of dams and other techniques, alone or in combination), including assessments of institutional requirements at different levels and within relevant sectors • Regional (multi-country) assessments that look at cross-boundary effects, regional instability as well as opportunities to share resources
2. Dam pre-feasibility	Dam studies are being initiated, it is the further exploration of a dam option, but different configurations can still be decided. The dam option investigated may be part of a mix of technologies.	<ul style="list-style-type: none"> • Assessments of the multi-functionality of the dam and its consequences for construction and operations • Siting studies, to study different dam options (size, location, number) • Studies that look at the mix of technologies, to assure baseload and equitable and sustainable service delivery • Watershed / basin-wide studies, at least looking at cumulative effects • Study of the mix of different technology options, reinforcing each other - <i>includes dam rehabilitation</i> • Strategic environmental assessment of dam options (SEA)- to help decide on best option), including safety and resettlement aspects • Assessments of climate change risk (should be integrated in SEA)
3. Dam feasibility and design	The preferred dam configuration has been selected and for this option a project proposal is being prepared.	<ul style="list-style-type: none"> • Detailed HSAP assessment • Detailed environmental and social assessment (ESIA), resulting in an ESMP • Dam rehabilitation studies • Resettlement action plans that offer just compensation, secure rights to resources and guarantee sustainable livelihoods • Feasibility studies • Financing for ESMP formally confirmed at same time as financing for infrastructure

Annex 3: Sources for a governance context risk assessment

To carry out a governance risk assessment use can be made of existing experiences and information sources.

Relevant information sources are the following:

- World Bank: Worldwide Governance Indicators – governance indicators for 215 countries, for six dimensions of governance: Voice and Accountability; Political Stability and Absence of Violence; Government Effectiveness; Regulatory Quality; Rule of Law; Control of Corruption.
<http://info.worldbank.org/governance/wgi/index.aspx#reports> (click on table view tab and select Country)
- World Bank Harmonized List of Fragile Situations. <http://siteresources.worldbank.org/EXTLICUS/Resources/511777-1269623894864/FY15FragileSituationList.pdf>
- Human Rights Watch: <http://www.hrw.org>. Select country reports
- Global Witness: www.globalwitness.org Search on website for [country] + 'human rights'
- Transparency International Corruption Perceptions Index. Based on expert opinion, the Corruption Perceptions Index measures the perceived levels of public sector corruption worldwide. <http://www.transparency.org/>
- Amnesty International Annual Report: The state of the world's human rights –information on key human rights issues, including: freedom of expression; international justice; corporate accountability; the death penalty; and reproductive rights.
<https://www.amnesty.org/en/documents/pol10/2552/2016/en/>
- The Global Peace Index. Published by the Institute for Economics & Peace, This index is the world's leading measure of national peacefulness. It ranks 163 nations according to their absence of violence. It's made up of 23 indicators, ranging from a nation's level of military expenditure to its relations with neighbouring countries and the level of respect for human rights.
http://static.visionofhumanity.org/sites/default/files/GPI%202016%20Report_2.pdf

A relevant process to assess governance risk was developed by FSC (Forest Stewardship Council) by their approach of a National Risk Assessment (NRA), by which areas are designated as either 'low risk' or 'specified risk'. To carry out these assessments the FSC has developed an NRA framework, with the 4 following components – for each component the framework provides a list of useful references and websites where information can be acquired to undertake the assessment:

- Country governance context (level of corruption, governance, lawlessness, fragility of the State, freedom of journalism, freedom of speech, peace, human rights, armed or violent conflicts by or in the country)
- Assessment of any forestry sector associated with violent armed conflict, including that which threatens national or regional security and/or is linked to military control.
- Assessment of whether in the country labour rights are respected, including rights as specified in ILO Fundamental Principles and Rights at work.
- Assessment of whether in the country the rights of Indigenous and Traditional Peoples are upheld.

NRAs have been carried out for a range of countries and the results are publicly available. *References are the following:*

- <https://ic.fsc.org/en/our-impact/program-areas/controlled-wood-01/controlled-wood-risk-assessments> (overview of approach)
- <https://ic.fsc.org/en/our-impact/program-areas/controlled-wood-01/controlled-wood-risk-assessments/consultation-on-the-centralized-national-risk-assessment> (overview of all assessments that have been done so far).