

**A Synthesis on Strategic Delta Planning in Action  
Wishful Thinking, Vested Practices and Unexpected Changes**

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## REVIEW ARTICLE



# A synthesis on strategic delta planning in action: wishful thinking, vested practices and unexpected changes

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In this review, we take stock of 10 research articles that cover strategic delta planning processes in Asia, Europe, and the US. We test working hypotheses about consent, innovations, actor coalitions, and planning tools in different phases. We posit that strategic delta planning is a deliberate effort to influence delta developments, wherein wishful thinking on how a delta could develop is repeatedly confronted with vested practices and interests. These confrontations produce expected (e.g., institutional embedment, changing people's minds) and unexpected changes (e.g., actors suddenly consenting or stepping out). Strategic delta planning is therefore not only an ambitious planning process, it is also highly uncertain, as consent on strategic directions has to be renegotiated across phases and arenas. Recommendations for practice are therefore highlighted that cover vocabulary, persuasiveness and tools. Further research is proposed to study the vagaries of strategic delta plans in urbanising deltas.

**Keywords:** strategic thinking; long-term planning; adaptive management; policy; transformation

### 1. Empirical and analytical positioning of strategic delta planning

Strategic planning has gained a lot of attention in the worlds of planning and academia. Strategic visions are being launched for companies (Minzberg 1994), urban areas (Healey 2007), nations and even continents (African Union 2015). Strategic planning covers river basins (Avezado *et al.* 2000), landscapes (Angelstam *et al.* 2017) and flood risk management (Hutter 2007). But what remains from the visionary plans and strategies once they have been completed? Academics have tried to understand these planning efforts at different scales and in different contexts (Albrechts, Balducci, and Hillier 2016). Several scholars call for more radical approaches in strategic planning in order to transform planning decisions and land use (Healey 2009; Albrechts 2010, 2015; Bafarasat 2015).

In this Special Issue, we have focused on one specific application domain of strategic planning; that of delta areas. Over the past 10–15 years we have seen a string of delta planning efforts with strategic long term development directions – mostly in delta

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areas of Europe, Asia, the United States, and to a lesser extent in Africa.<sup>1</sup> Deltas are in need of transformative planning, it is argued, as many of the world's densely populated deltas (e.g., those of the rivers Elbe, Ganges-Brahmaputra, Mekong, Po, Sacramento-Joaquin) are on a trajectory in which societies are becoming increasingly off balance with their delta environment. Natural environments such as mangroves or salt marshes degrade with the expansion of urbanisation and agricultural intensification, and delta lands erode as sediments are no longer deposited and sea levels continue to rise (Syvitski *et al.* 2009; Renaud *et al.* 2013; Renaud, Szabo, and Matthews 2016; Giosan *et al.* 2014; Szabo *et al.* 2016; Nicholls *et al.* 2018). Societies are increasingly being impacted by these trends, in part as plans and projects frequently reinforce entrenched agendas, strategies and actor coalitions (Brondizio *et al.* 2016; Seijger *et al.* 2017a).

We have observed that strategic planning is not ordinary day-to-day planning; in its most ideal setting it is a cyclical reflexive stock taking exercise, in which policy actors take stock of the current setting and strategic delta plans provide strategic direction for future policy making and development planning. Whilst strategic (delta) plans may provide direction to policy making and development planning, they do not necessarily provide the means to do so. To become meaningful or effective in implementation, strategic goals and choices need to become ingrained within day-to-day policy making and development planning. As this special issue shows, this is not as straightforward or guaranteed a process as strategic thinkers may have wished.

In the Dutch context, as exemplified by the Dutch Delta Committees I (1953) and II (2008) (DDC-I and DDC-II), strategic delta planning has become a specific and special domain, as:

- i. the (DDC) I and II were instituted by parliament as an extra-parliamentary and political entity, granting strategic and societal importance to its work that transcends the boundaries of political parties, line ministries, budgeting;<sup>2</sup>
- ii. they are instigated by an urgency to address a threat that warrants a strategic stock taking on how to cope with it in the future (in the case of DDC-I this was the 1953 flooding, for DDC-II the forecasted impacts of climate change).

The aim of this synthesis article is to combine and aggregate the findings of the 10 research articles in the Special Issue, ultimately deepening the understanding of how strategic choices and goals can become ingrained in day-to-day policy and planning to respond to delta-specific matters of sustainable development. What insights and lessons do the papers provide on these issues? At the start of our research project,<sup>3</sup> we developed an analytical framework “the Hourglass” (see Figure 1). This framework assigns a central role to negotiated consent among actors during agenda setting, plan formulation and implementation (Seijger *et al.* 2017b). Important elements for consent were innovations, actor coalitions, and planning tools. The convergence-divergence is a consequence of negotiating consent for planning and implementation. Actors and innovations may follow various trajectories in relation to consent negotiations: (1) “step forward”, (2) “step out”, (3) “step in”, and (4) “sidestep”.

The framework in the article was accompanied by a set of working hypotheses about the nature and success of strategic delta planning (listed in Table 1, also in Seijger *et al.* 2017b). For this synthesis article, we analysed the validity of these

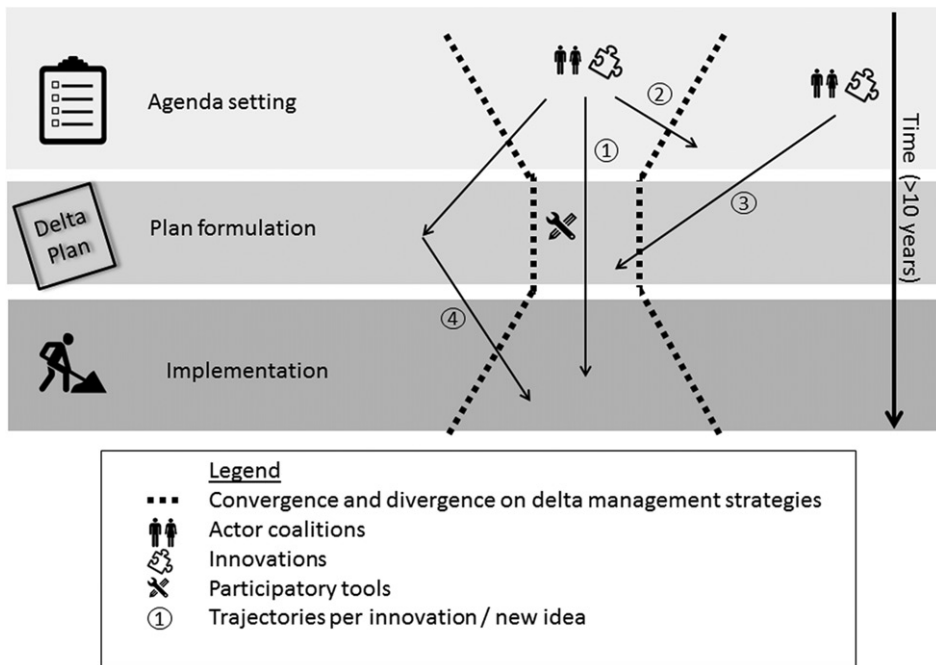


Figure 1. Hourglass analytical framework to analyse a strategic delta planning process over a longer period of time, until a new strategic delta plan is developed. The dotted lines reflect the porous boundary between a strategic delta planning process and a wider context of politics, institutions and prevailing cultures. Source: originally published in Seijger *et al.* (2017b).

earlier working hypotheses with the evidence presented in the different papers, distinguishing between evidence for a specified phenomenon and overall validity of the hypothesis (after Miller and Fredericks 2003). Our findings (summarised in Table 1, a detailed elaboration is provided in Appendix 1, online supplementary data) present a mixed outcome, suggesting that there is an interplay of mechanisms at work that determine the outcomes of a strategic planning process. This comparison of the research papers with the working hypotheses and the Hourglass framework formed the basis to further synthesise the articles at an analytical level, in order to identify those mechanisms that explain how strategic plans get translated into policies, programs and development plans. The article is structured in 6 sections that cover the role of innovations (Section 2), actor coalitions (Section 3) and planning tools (Section 4). These perspectives on innovations, actor coalitions and tools shed light on a key characteristic of strategic delta planning, namely that repeated confrontations between wishful thinking and vested practices could produce unexpected changes (Section 5). Conclusions, insights for practice and recommendations for further research are presented in Section 6.

## 2. Innovations in strategic planning: questioning conventional understandings and vehicles for actor mobilization

The initial Hourglass framework postulated that innovations, when formulated as multipurpose solutions that address multiple concerns, are key building blocks of

Table 1. Evidence for the working hypotheses in the research articles of this special issue.

Scope	Description of working hypotheses (WHP)	Evidence that the specified phenomenon occurred (+) or not occurred (-)	WHP remains valid (+) or invalid (-)
The nature and success of strategic delta planning	<p>1. Strategic delta planning is distinct from mainstream delta planning: it adopts a long-term planning horizon (50–100 years) that allows new, or controversial issues to be put on the ‘planning table’.</p> <p>2. The success of strategic delta planning is determined by the strength and duration of negotiated consent; this results in convergence from agenda setting to plan formulation, and divergence from plan formulation to implementation.</p> <p>3. The success of strategic delta planning is also determined by embedment in the wider context. This requires changes in legislation and funding to craft new arrangements that support implementation of strategic delta plans.</p>	<p>(+) van Loon and Vellinga (2019), Hoang <i>et al.</i> (2019), Hasan <i>et al.</i> (2019), Minkman, Letitre, and van Buuren (2019), Kraus-Polk and Milligan (2019)</p> <p>(+) van Loon and Vellinga (2019), Hoang <i>et al.</i> (2019), Hasan <i>et al.</i> (2019), Korbee <i>et al.</i> (2019), Kraus-Polk and Milligan (2019) (-) Minkman, Letitre, and van Buuren (2019), Gaglio <i>et al.</i> (2019)</p> <p>(+) Hoang <i>et al.</i> (2019), Hasan <i>et al.</i> (2019), Korbee <i>et al.</i> (2019), van Loon and Vellinga (2019), Kraus-Polk and Milligan (2019), Gaglio <i>et al.</i> (2019), Minkman, Letitre, and van Buuren (2019)</p>	<p>(+)</p> <p>(+)</p> <p>(+) The “(-)” studies report the opposite (no strong consent, no convergence-divergence).</p> <p>van Loon and Vellinga (2019). (+) The remaining “(-)” studies report the opposite (no embedment in wider context, no strong consent).</p>

(Continued)

Table 1. (Continued).

<p>Ways to negotiate consent in strategic delta planning</p>	<p>4. Two types of actor coalitions can be identified in strategic delta planning processes: natural coalitions and pragmatic coalitions. The different types of coalition reflect a different MOTA attitude (motivation, threats, opportunities, ability) to plans and solutions.</p>	<p>(+) Minkman, Letitre, and van Buuren (2019)                  (-) van Loon and Vellinga (2019), Hoang <i>et al.</i> (2019), Hasan <i>et al.</i> (2019), Korbee <i>et al.</i> (2019)</p>	<p>(-) difficult to observe different actor coalitions through phases of strategic delta planning.</p>
<p>5. Innovative solutions can contribute to negotiating consent in strategic delta planning processes when they are able to serve and align the interests of different actor coalitions. This can be achieved when the innovations are multipurpose and re-adjustable to different contexts.</p>	<p>(+) van Loon and Vellinga (2019), Hoang <i>et al.</i> (2019), Hasan <i>et al.</i> (2019), Korbee <i>et al.</i> (2019), Minkman, Letitre, and van Buuren (2019), Hoan, Khoi, and Trung (2019), Gaglio <i>et al.</i> (2019)</p>	<p>(+) The “(-)” studies report no or weak consent for innovations, actor buy-in was not strong enough.</p>	
<p>6. Participatory tools contribute to consent when they are tailored to the level of detail required by actors involved in a specific phase (agenda setting, strategic delta plan formulation, implementation) of the strategic delta planning process.</p>	<p>(+) van Loon and Vellinga (2019), Hasan <i>et al.</i> (2019), Evers <i>et al.</i> (2019)                  (-) Korbee <i>et al.</i> (2019), Hoan, Khoi, and Trung (2019), Quan <i>et al.</i> (2019)</p>	<p>(+) The “(-)” studies had either not-tailored tools, or tools that uncovered actor constraints to consent.</p>	

successful strategic planning, as they will bind large and strong actor-networks and, hence, with continued and mobilized support, will find the light of day in the implementation phase (Seijger *et al.* 2017b). As such, we placed them as continuums in the long-term strategy process that get shaped during agenda setting, structure the plan formulation and become projects for implementation. This, as turns out from the contributions to this special issue, was too simplistic (see also Table 1, hypothesis 5). By plotting the different innovations in the analytical framework (see Figure 2), it becomes evident that the continuum and “straightforwardness” does not hold true: not for the innovation, nor for the actor coalitions. Apart from the clear notion that innovations challenge conventional understandings in policy sectors and priorities of delta management,<sup>4</sup> the contributions to this special issue bring up three important nuances.

First, innovations have to be highly flexible to adjust to changing stakes and actors in different phases of strategic delta planning. Actor coalitions are not stable (interest group like) networks, but highly dynamic networks that change shape and composition as the strategic plan moves across the different arenas of strategic planning, via policy making and decisions towards development planning and implementation. Innovations therefore have to be adaptable to suit changing stakes and actors. This is clearly highlighted by Hoang *et al.* (2019), who show how actor involvement

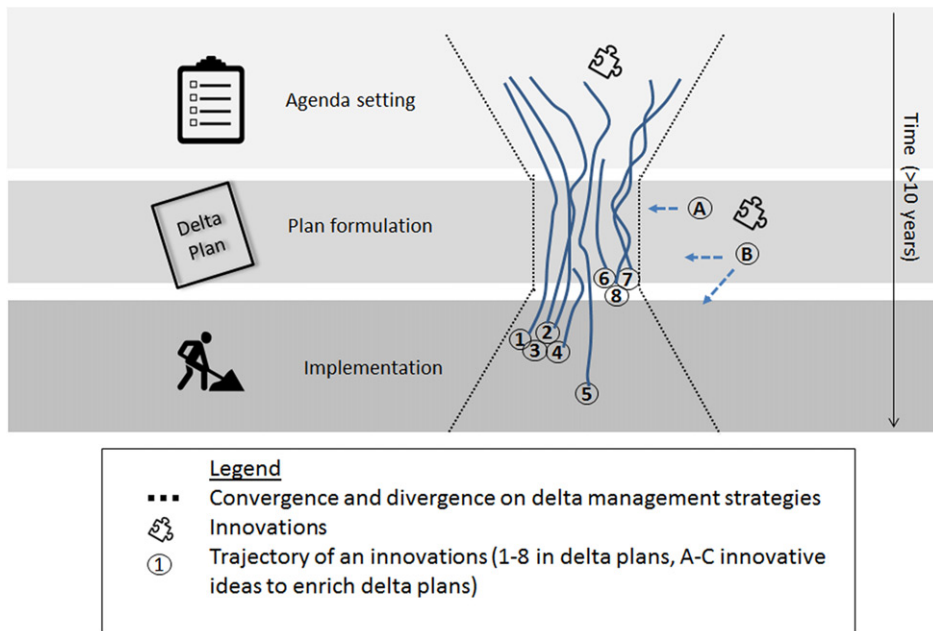


Figure 2. Innovation trajectories of novel ideas (1–8) in phases of delta planning, and ideas that are proposed to enrich delta planning (A–C). These ideas are discussed in Section 2 and further explained in the papers. 1–4 Mekong Delta: 1 is agribusiness, 2 is salinity adaptation, 3 is alternatives for triple rice, 4 is interprovincial collaboration. 5 The Netherlands: wide green dikes. 6–8 Jakarta: 6 is long-term flood protection, 7 is urban offshore developments, and 8 is halting groundwater pumping. A is monitoring human use in the Sacramento-San Joaquin Delta, B is diversity of ecosystem services in the Po Delta.



changes as the Mekong Delta Plan moves from the formulation and strategic planning stage to the political adoption and policy stage. Thus illustrating, how in each step along the process different decisions and decision makers need to be appeased and co-opted. The contribution of van Loon and Vellinga (2019) shows how this is even the case on a more delimited scale when one innovation is moved through programming to implementation of a 1 kilometre pilot in one location. Thus, even in the case of the “wide green dikes”, different actors are mobilized and let go at different stages of the planning approval and implementation. The innovations themselves, (agribusiness, salinity adaptation, alternatives for triple rice and interprovincial collaboration for the Mekong, and wide green dikes for the Netherlands) seem hereby to keep stance – but only in generic idea and concept, and only as long as they can be interpreted and moulded to suit the altering actor’s concerns as it is moved from one phase/arena to another (Korbee *et al.* 2019; Hoan, Khoi, and Trung 2019). For many of the innovations shown in Figure 2 it is too early to tell how they will pan out once they pass through the phases (and accompanying arenas of actors) of programming and implementation. In order to succeed and reach physical implementation, they will have to appease some of the most salient concerns and constraints that govern local actors’ perceptions to broker local consent – the degree to which the innovations can then be customized in terms of detailed design to accommodate these demands will seal their fate.

Second, the continuum of innovations in SDP is not only shaped by shifting actor-networks, also the degree of detailed design with which it is positioned within an SDP determines its trajectory through the different phases of the SDP (e.g., strategic plan, policy, programming and implementation). Although the evidence is (still) slim, innovations expressed as ideas (or strategic choices of weighted alternatives) may travel further than technological detailed designs. Van Loon and Vellinga (2019) provide a neat illustration of how the innovation of “wide green dykes” is given shape in its detailed design only in the programming and implementation phase. The SDP of the Second Dutch Delta Committee provides the strategic framework and goals (e.g., incorporating spatial planning and multifunctional land use into long-term integrated delta planning), which are subsequently detailed into an innovative design in which the Ministry of Agriculture and Nature and other actors linked nature conservation firmly to flood protection. As both Hoang *et al.* (2019) and Hasan *et al.* (2019) illustrate, the concepts of innovation entailed in the Mekong Delta Plan (e.g., agri-business, adapt to salinity, alternatives for triple rice, and cross-provincial coordination) travel well as notions of how to shape future developments in the Mekong Delta once the SDP enters its programming and implementation phase (see also Seijger *et al.* 2019). By stating that there is a strategic need to re-set future boundaries between fresh and saline water zones in a dual zone coastal management, but without specifying where and how those boundaries need to be set precisely, the MDP leaves room for actors to shape these innovations in their precise outcomes and applications during the programming and implementation phases – providing room to customize them to the specificities of the (physical) context as well as the specific constraints and opportunities of the actors.

That the latter is needed, in order to come to a successful implementation of these ideas, is made clear by the contributions of Hoan, Khoi, and Trung (2019), Quan *et al.* (2019), and Korbee *et al.* (2019) The contribution of Minkman, Letitre,

and van Buuren illustrates how the innovations for long-term flood protection, halting urban groundwater extraction and future urban off-shore expansion for the city of Jakarta, may have been taken one step too far during the strategic and policy phase. Undoubtedly relevant and well-intended innovations at the strategic level, too detailed designs in technical feasibility studies at the strategic and policy level lock-in the options to address these strategic goals in a narrow band of technological innovation. Once actors (at the programming or implementation phase) identify faults or drawbacks that need to be addressed, opt-out of the innovation, and development of alternatives, seems more likely to occur than modification and customization, as evidenced in the impasse in which the Jakarta Delta plan has found itself. In strategic delta planning, defining innovations concrete enough to induce political buy-in, but not too detailed to impede actor alignment and customization in the programming and implementation phase, may well thus prove a fine line to walk.

Third, innovations, whether as strong ideas of doing things differently, new methods of handling issues or participation, or technological developments, may arise along the process of an SDP going through its phases, that have not been part of the original “strategic design phase” of the SDP. Such innovations enter the process as “outsiders”, and will need to be embraced by relevant actor-networks in order to become effective – either in a strategy-policy phase of an SDP or in a programming or implementation phase (whether SDP or regular development). The contribution of Gaglio *et al.* (2019) provides a strong argument to base the management of the Po delta on an ecosystem services approach that enhances its diversity and sustainability. Whilst this “outsider” innovation has a strong and clear appeal to nature conservation actors, and is partially successful in restoring fresh water supply for reed restoration, it has been less effective in effectuating change within the clam industry. Clearly, alignment with, and uptake by, relevant actor-networks at the different stages of programming and implementation matter in how an innovation may be taken up. Interestingly, the case of Kraus-Polk and Milligan (2019) shows how an “outsider” innovation, as the monitoring of human use and social benefits of landscape restoration, can gain ground in the Delta Conservation Framework of the Sacramento-San Joaquin Delta by actively and methodologically engaging with local citizens alongside State- and Federal-personnel, and as such establish the basis for its own actor-network.

### **3. Formation of actor coalitions – coalitions across policy sectors and renegotiation at local-regional levels**

Whether or not policy agendas and novel ideas end up within a strategic delta plan and further evolve into implementation processes highly depends on the suite of actors supporting and criticising delta plans. Initially, we hypothesised that different sorts of coalitions would be formed, and actors would step in and out over time. Again, the contributions in this Special Issue provide a richer understanding (see also [Table 1](#), hypothesis 4). Sufficient insight is offered for three cases to explore actor dynamics across different phases of decision-making (shown in [Figure 3](#)).

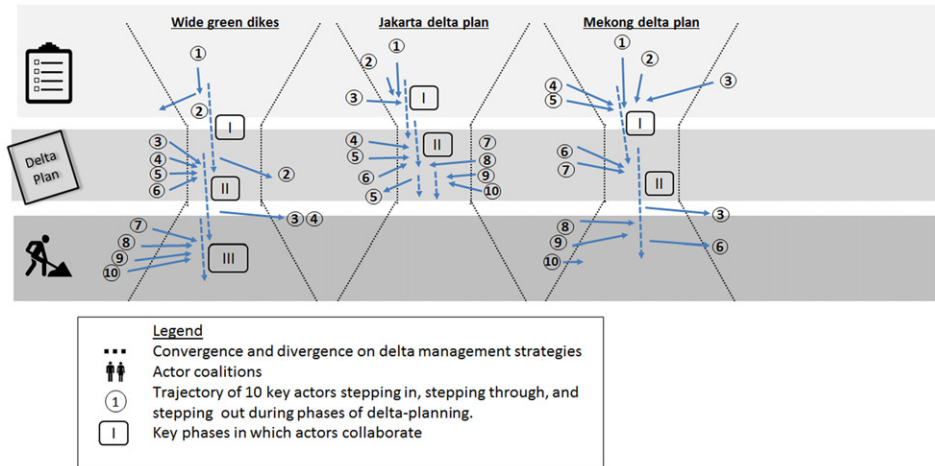


Figure 3. Main actor dynamics around the Mekong Delta plan, wide green dikes in the Netherlands, and Jakarta Delta plans.

Note: Wide green dikes: 1 is Second Delta Commission, 2 is delta program, 3 is Ministry of Agriculture and Nature, 4 is regional water boards in the Wadden Sea area, 5 is nature conservation NGOs, 6 is researchers, 7 is water board Hunze and Aa's, 8 is Flood protection Program HWBP, 9 is Ecoshape, 10 is Wadden Fund. Large arrow I: phase of national decision making, start of delta program. Large arrow II: make regional strategy for Wadden Sea area, large arrow III: pilot green wide dike.

Note: Jakarta Delta plan: 1 is Indonesian government, 2 is Dutch government, 3 is technical experts for Jakarta Delta Plan, 4 is Ministry of Economic Affairs, 5 is governor of Jakarta, 6 is Korean government, 7 is the Indonesian President, 8 is National Planning Agency, 9 are the 3 Ministries of Maritime Affairs, Environment, Fisheries, 10 is Save the Bay coalition. Large arrow I: agenda setting for Jakarta Delta plan, Large arrow II master plan (rejected by President), revision process resulted in 2 separate plans.

Note: Mekong Delta Plan: 1 is Vietnamese government, 2 is Dutch government, 3 is technical experts for Mekong Delta plan, 4 is Ministry of Agriculture and Rural Development, 5 is Ministry of Environment and Natural resources, 6 is Southwest Steering Committee, 7 is retired scientists, 8 is President, 9 is International Development Partners, 10 is local-regional governmental actors. Large arrow I: set agenda for Mekong Delta Plan, large arrow II formulate plan and gain support for implementation.

The cases highlight, to a large extent, similar actor dynamics that further enrich our understanding of actor coalitions in strategic delta planning in three ways. First, at a national level, an agenda is set for strategic delta planning. This agenda is not cast in stone, but changes over time. In Jakarta, the original goal of improving flood protection before 2030 shifted to long-term flood protection and became intertwined with urban development when the Ministry of Economic Affairs stepped in (Minkman, Letitre, and van Buuren 2019). In Vietnam, the agenda for the Mekong Delta Plan broadened from climate change to agribusiness and climate adaptation with Ministry of Agriculture and Rural Development and the ministry of Environment and Natural Resources disputing and gradually stepping in to set the agenda for a Mekong Delta Plan (Hasan *et al.* 2019; Hoang *et al.* 2019). Both Hasan *et al.* (2019) and Minkman, Letitre, and van Buuren

(2019) discuss the important role the Dutch Government played in promoting and co-financing strategic delta plans in Indonesia and Vietnam. In the Netherlands, the Second Delta Committee followed the earlier “Room for the River” decision and emphasised the incorporation of spatial planning and multifunctional land use into long term integrated delta planning. That agenda set a supportive stage to investigate novel flood protection concepts such as the wide green dike. The Ministry of Agriculture and Nature then firmly linked nature conservation to flood protection and, through joint research projects, created a coalition between the Ministries who were responsible for flood protection and nature conservation.

Second, the newly formed coalitions between sectoral divided Ministries are strengthened or weakened by influential regional actors stepping in. Hoang *et al.* (2019) discusses the important role of the Southwest Steering Committee<sup>5</sup> supporting the Mekong Delta Plan (as it offered an opportunity to put economic development on the agenda), whereas regional governmental agencies did not necessarily support the MDP. Hasan *et al.* (2019) further highlight the role of retired scientists from the Delta supporting the Mekong Delta Plan. Van Loon and Vellinga (2019) also discuss how regional actors are stepping in to support the wide green dike, with an important pushing/promoting role for the regional water authority. In Jakarta, regional actors are reluctant to step in for the plan (NCICD 1) that was coordinated by the Ministry of Economic Affairs, with the President not approving the plan. An alternative plan was developed by a new “greener” actor coalition (a.o. the National Planning Agency, 3 Ministries of Maritime Affairs, Environment, Fisheries). Meanwhile, the old plan was also updated to NCICD 2 with the influential Governor of Jakarta stepping out. And, with two competing plans and actor coalitions, the impasse was complete and no further decisions were taken (Minkman, Letitre, and van Buuren 2019).

Third, the more the planning processes move towards implementation, the more one sees the importance of gaining consent from local actors and actors who may finance projects and strategies. The important role of local actors in supporting and implementing projects that are in line with the directions envisioned in a strategic delta plan is studied by Hoan, Khoi, and Trung (2019), Korbee *et al.* (2019), and Quan *et al.* (2019) Both Hoan, Khoi, and Trung (2019) and Quan *et al.* (2019) study the motivation and ability of farmers to change to alternative livelihoods, such as rice-vegetable or rice-aquaculture. They reported that farmers have relative low motivation to change. However, they also found threats that strongly influence motivation to change, such as dropping market prices, declining groundwater supplies and increasing salinity intrusion (Hoan, Khoi, and Trung 2019; Quan *et al.* 2019). Triggers were also observed that could raise motivation and ability, such as the availability of high-quality seeds, materials and techniques (Quan *et al.* 2019). Korbee *et al.* (2019) studied how local and regional government actors assess the implementation feasibility of agribusiness and adaptation to salinity, two key ideas of the Mekong Delta Plan. The authors find that actors’ motivations towards agricultural modernisation are high(er) than towards salinity adaptation. Motivations and abilities to alter planning practices are low, as abilities seem to depend on financial and technical assistance by international donors (World Bank, JICA, GIZ). But similar to Hoan, Khoi, and Trung (2019) and Quan *et al.*’s (2019) findings, the authors observe that the motivations and abilities of governmental actors can change, due to triggers that can help to increase plan implementation feasibility (such as new policies, additional resources and policy events). The importance of obtaining support from actors with financial resources is also made

by other authors in the Special Issue. In Vietnam, Hanoi-based International Development partners stepped in as they issued a support statement for the Mekong Delta Plan and assured possible funding for implementation (Hoang *et al.* 2019; Hasan *et al.* 2019) – they proved to be vital actors in moving the SDP from its strategy to policy phase. In Jakarta, such support is absent as the World Bank or Asian Development Bank did not step in to support the developed plan(s) (Minkman, Letitre, and van Buuren 2019). In the Netherlands, funding appeared decisive to actually pilot the wide green dike. Apart from the Dutch Flood Protection Programme, the Wadden Fund (a regional fund to finance projects to compensate negative effects of gas extraction on nature) funded a substantial part (van Loon and Vellinga 2019).

In sum, the image arises that indeed, new actor coalitions are formed during strategic delta planning processes, with attention on national-international support and local-regional implementation feasibility. A first major accomplishment is the creation of pragmatic coalitions (i.e., a constructive coalition for a plan or strategy, but they do not share deep core beliefs) across relevant Ministries and National Planning agencies (achieved in the Netherlands and Vietnam; failed in Indonesia). Innovative solutions (as discussed in the previous section) may have the potential to enable the formation of such pragmatic coalitions. And when one observes implementation trajectories (from agenda setting to plan formulation and implementation), the coalition should expand and include influential local-regional actors to devise feasible regional-local strategies that fit with local motivations and abilities, and can be supported by (a coalition of) actors who have the financial means (achieved in the Netherlands and Vietnam; failed in Indonesia). It seems that with the character of strategic delta plans (long-term vision, integrating diverse sectors), actors are almost forced to form a new coalition across different policy sectors (pragmatic coalitions) at national and local-regional levels, and that these pragmatic coalitions come with plans that can count on stronger consent as multiple interests (be it sectors of environment and agriculture, or local-regional interests and trends) are covered.

#### **4. Planning tools and approaches – supporting strategy formulation and (re)creating actor coalitions in different phases**

The contributions in this Special Issue point to a variety of planning tools that are of use in different phases of strategic delta planning. Most of the tools were tailored to specific features of strategic delta planning and focus on:

- Scenarios of socio-economic pathways for Mekong Delta development, with business-as-usual scenarios (food security, corridor industrialization) and more ambitious scenarios (agro-business industrialization, dual-node industrialization) (Hasan *et al.* 2019).
- An evaluation framework for tool developers and participants in participatory planning contexts to evaluate the performance of diverse tools for strategic delta planning in pre and post evaluations (Evers *et al.* 2019).
- Landscape design workshops to generate with participants local, integrated, nature-based strategies for flood protection, that were further explored in studies for the delta plan (van Loon and Vellinga 2019).
- An actor assessment tool (MOTA, motivations, opportunities, threats, abilities) that explores the motivations and abilities of local-regional actors towards strategic delta

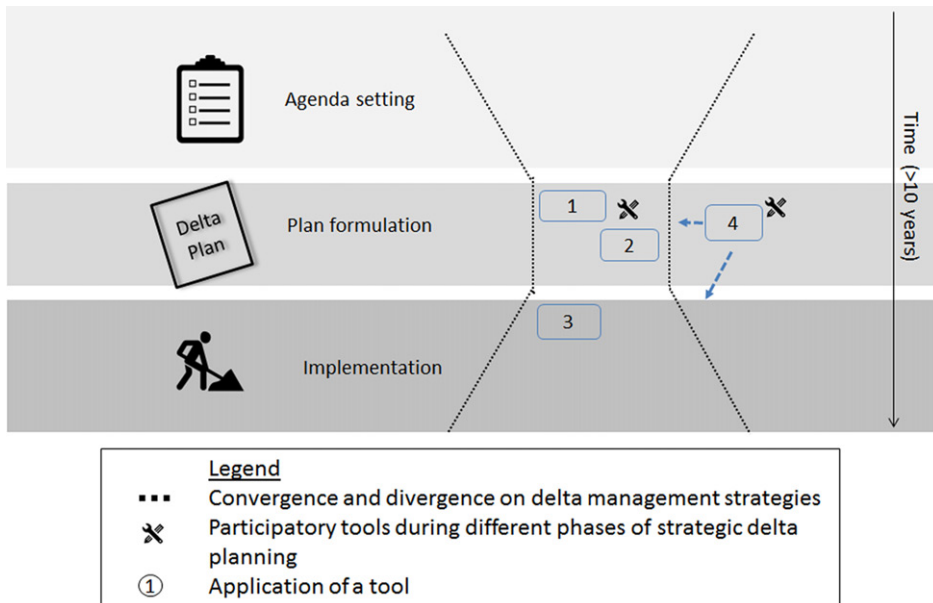


Figure 4. Planning tools applied in different phases of strategic delta planning. 1 is scenarios, 2 is design workshop, 3 is MOTA, and 4 is assessment of tool performance.

plans, and thus gives insight into the bottom-up implementation feasibility (Hoan, Khoi, and Trung 2019; Korbee *et al.* 2019; Quan *et al.* 2019).

The tools were applied, or proposed in the case of Evers *et al.* (2019), for different phases of strategic delta planning. As Figure 4 shows, they relate to the phases of plan formulation and implementation.

Empirical evidence for the converging, structuring role that tools played (or can play in the case of MOTA) in delta planning processes is present. Hasan *et al.* (2019) discuss how scenarios were developed that fitted the realities of the Mekong Delta. By recognizing that land use change may have bigger impacts than climate, the scenarios predominantly focused on socio-economic developments instead of climate change. Furthermore, one scenario was selected as a guide for planning, instead of not choosing a preferred scenario (which is a central logic of scenario planning to keep options open). The MOTA studies, indeed, reveal that the local-regional realities of farmers and government agencies are different from the long-term visions and strategic directions proposed in a strategic delta plan, although they recognise that motivations and abilities change over time, and can be influenced through training, showcasing, propaganda, and development of supply chains (Hoan, Khoi, and Trung 2019; Korbee *et al.* 2019; Quan *et al.* 2019).

These examples of participatory planning tools in delta planning processes point to many diverse functions. For instance, design workshops can generate strategies that fit in a local context (van Loon and Vellinga 2019) or monitoring programs can generate new knowledge on the social benefits of restored delta landscapes (Kraus-Polk and Milligan 2019). They could also box, converge, narrow possible futures into a set of scenarios or visions (Hasan *et al.* 2019). And, they could assist in the translation of strategic directions into local-regional implications and strategies for local actors, such

as government agencies, nature conservation NGOs, farmers and farmer cooperatives (Hoan, Khoi, and Trung 2019; Korbee *et al.* 2019; Quan *et al.* 2019). The most important claim, namely that tools contribute to consent in delta planning processes, appears to hold (see also Table 1, hypothesis 6), bearing in mind the particular phase of a strategic delta planning process and the fine lines to walk between being too detailed or too vague for obtaining actor buy-in at national and local-regional levels. Moreover, tools have to be adjusted to their context. Such planning on how to use or adjust a tool may happen in advance of, and/or during the planning activity, as happened with the scenarios in the Mekong Delta that were subjected to changes as they were being created (Hasan *et al.* 2019). These adjustments, thus, also require skills from facilitators to be able to judge in action whether the tool is contributing to consent negotiations, or whether the tool or its use needs adjustment (Evers *et al.* 2019).

In the end, it seems that a tool can be a vehicle for many things, beyond its immediate “content” outcome. Tools are also a means to: bring actors together to share and exchange knowledge, assist in structuring of problems and formulate possible strategies, get a grip on coupled problems, and understand different socio-economic and natural-technical trends in delta areas. Therefore, they do play a role and can assist in the (re)creation of actor coalitions around innovative ideas and strategies across different decision-making phases. Regarding the latter, the contributions emphasise how tools in different phases support consent negotiations: scenarios in the plan/strategy formulation phase, design workshops during iterations between plan formulation and policy adoption, MOTA in programming and implementation.

## **5. Strategic delta planning – confrontations between wishful thinking and vested practices**

The previous sections gave various insights on what strategic delta plans can deliver. New ideas, understandings and development agendas can be introduced that express a desired development trajectory with strategic priorities to which to alter a delta, to which actors are induced to adhere – for instance, more nature (conservation or restoration), more diversified agriculture, or more institutional integration. In the case of Sacramento-San Joaquin Delta the desired development is phrased in terms of establishing co-equality of water supply, habitat expansion, and cultural values. Whereas in the Mekong Delta a choice is advocated to shift away from intensified agriculture and overreliance on fresh water resources in the Mekong. New or controversial issues can thus be put on the planning table (see also Table 1, hypothesis 1). Yet, strategic choices on how a delta could develop are not always made very explicit and may remain hidden behind vague policy concepts (“robust and adaptable solutions” in the wide green dike) or, are not driven down into the implementation and programming phase, such as halting land subsidence in Jakarta or stopping environmental degradation in the Po Delta.

There are merits to this wishful thinking: not only are new issues put on the planning table, but also new coalitions can be formed who consent to particular innovations such as the wide green dike, or consent to a strategic delta plan, as reflected in the growing support base for the Mekong Delta plan. Yet consent is often weak, as also reflected in the limited convergence on prioritised problems and strategies (see also Table 1, hypothesis 2). The studies on the Po, Jakarta, and Mekong deltas reveal frictions with entrenched agendas for delta development (e.g., exploitation of Po Delta

land, rice cultivation in Mekong, ad hoc flood control in Jakarta), making it content-wise difficult to implement novel ideas for delta management and development. In Jakarta, the delta plan shows a poor fit with the “apathy of the Indonesian government to take ownership”. This is in stark contrast to the Mekong delta, where annual Mekong Delta Fora are important events to discuss alternative development agendas for the Mekong Delta and re-confirm or re-constitute the stakeholder coalitions and consent around the SDP. Hasan *et al.* (2019) and Hoang *et al.* (2019) also indicate that local-regional actors support the MDP as it fits their interests and knowledge. The innovation of monitoring human use in the Sacramento-San Joaquin Delta fits an actor context where there is a growing interest in understanding human use in the delta landscape. The pilot status of the wide green dike meant that the concept did not have to fulfil all rigid flood control regulation rules. The MOTA studies indicate the challenging fit of strategic delta plans with regional contexts and interests (Hoan, Khoi, and Trung 2019; Korbee *et al.* 2019; Quan *et al.* 2019).

As strategic delta planning processes balance wishful thinking with vested interests in a multi-actor context that, over time, switches from national to local-regional levels, unexpected changes – beyond what strategic planners intend for – are about to happen that further strengthen or weaken consent for a strategic delta plan. Unexpected changes may come when actors step in (e.g., ministries, regional authorities) and a plan moves forward into policy adoption and programming, or when influential actors step out (e.g., Governors) and the momentum to translate a strategic plan into programming and day-to-day planning appears to be halted. Evers *et al.* (2019) point to the inherent political nature of decision-making that may constrain the input that is generated by participatory planning tools and activities. Other difficulties in the confrontation of wishful thinking and vested interests link to resources and difficulties around citizen science (Kraus-Polk and Milligan 2019), transferability and adoptability of a delta plan (Minkman, Letitre, and van Buuren 2019; Korbee *et al.* 2019), and (to date) weak support among farmers to change (Gaglio *et al.* 2019; Hoan, Khoi, and Trung 2019).

One change that we deemed as a vital sign of sustained negotiated consent, namely embedment in the wider context, appears to be a severe challenge as, except for the Mekong Delta Plan, the reported studies do not produce evidence that changes in legislation or funding are made to craft new arrangements (see also Table 1, hypothesis 3). Moreover, the translation into short term sector-specific plans has not happened (yet). This suggests that the institutional embedment in the wider context hinges on reaching consent around the SDP in the political and policy stage: something that was elaborately brokered in the case of the Mekong by the international donor group through the annual Mekong Delta forums after the completion of the strategic planning phase (Hoang *et al.* 2019; Hasan *et al.* 2019); was politically premeditated in the case of the DDC-II by the issuing of the Delta Committee with its political mandate (Bloemen, van der Steen, and van der Wal 2018); and which failed to materialize in the case of Jakarta, as the political and policy phase entered a stalemate around entrenched competing plans (Minkman, Letitre, and van Buuren 2019). In sum, strategic delta planning appears to be characterised as a planned effort to influence delta developments, an effort wherein wishful thinking on how a delta could develop is repeatedly confronted with vested practices and interests; these confrontations produce expected (e.g., institutional embedment, changing people’s minds) and unexpected changes (e.g., actors suddenly consenting or stepping out), making it all in all an ambitious and



uncertain planning process with high stakes to be renegotiated across multiple decision-making phases and arenas.

Finally, the different papers offered rich material on the implementation of strategic delta plans in various contexts and arenas. **Textbox 1** synthesises the highlights that struck us as particularly valuable for practitioners involved in delta planning and management.

**Textbox 1.** Insights for SDP in practice:

- **Vocabulary** Develop and apply an SDP vocabulary that adheres to the contents of strategic planning and avoid semantic issues in culturally diverse settings (e.g. a vision, not a plan; focus on strategic issues, rather than understanding and delving into complexity; aim to select key strategic options).
- **Politics** Acknowledge the implications that strategic delta planning takes place within the realms of political decision making; e.g. negotiation of consent, confronting entrenched political agendas, power of representational vagueness and semi-finished designs). Hence, do not dive too deep into analytical preciseness – persuasiveness lies in the imagination not in the details (the power of leaving things out).
- **Entrenched frameworks** Beware of your limitations: some of the biggest recurring challenges relate to confronting entrenched development agendas that are anchored in legislation and planning frameworks.
- **Local implementation** Low motivation and abilities of regional government officials and farmers make it difficult to widen the problem analysis at local level and move the SDP from an abstract to a concrete local plan.
- **Alternatives** SDPs provide an opportunity to introduce alternative lenses on delta development. Perspectives that are frequently underrepresented are ecosystem services, equity and equality.
- **Strategic explicitness** SDP need to be clear on strategic choices and directions, making it explicit how and where it differs from existing policies.
- **Adjustable innovations** Innovations for implementation need to cover multiple interests, be flexible in interpretation, and salient to multiple studies and negotiations. Strike a balance between flexibility to interpret and visualisation of a persuasive narrative on the future to pursue.
- **Choosing tools** Tools encompass a wide array of different tools and methods that reflect a choice on how to shape the process of strategic planning. Past choices seem primarily driven by the prevailing mindset of the tool engager (e.g. ecosystem services, scenarios, etc). Attention needs to be given to whether process follows tools, or tools should follow process. Recognition of the diverse steps and phases of SDPs calls for conscious and tailored choices of tools for the right phase and process.
- **Tailoring tools** Tools can be tailored more to the different strategic planning processes: uncovering strategic issues, framing impacts of strategic choices on social, political and spatial changes.

## 6. Concluding insights and recommendations for practice and research

Based on our initial understanding, and the papers in this Special Issue that cover many aspects of strategic delta planning in diverse contexts, we draw the following three conclusions and link them to the broader field of strategic planning.

1. The convergence-divergence notion of the Hourglass analytical framework has been helpful in understanding actor, innovation, tool and consent dynamics in delta planning. A visual framework and working hypotheses gave structured directions to

analyse the technical and political aspects of strategic planning processes (Bryson 1988; Healey 2009), across different deltas and decision-making phases. However, it has overemphasised one major point of convergence: towards a strategic delta plan that can be politically approved. Instead, convergence of people's minds and decisions is relevant in each phase, and at least 4 phases are to be identified to further advance analytical clarity, namely: agenda setting ("setting the agenda for a strategic delta plan"), plan formulation ("strategy making and formulation of a strategic delta plan"), policy adoption and policy making ("strategies and activities to obtain political buy-in and formulate supportive policies"), programming ("implementation into more detailed plans, designs, projects"). By focusing on consent instead of consensus (e.g., Albrechts, Balducci, and Hillier 2016), emphasis is given that only a limited number of actors will give their consent to a strategic plan (see also Hillier 2003; Olesen 2014). Strategic delta plans will thus go through a cyclical spiral, in which not only the strategy is elaborated into its next phase, but also the consent for its strategic choices is subdued to new views and critiques that it will need to accommodate in order to move on. Innovations could serve as binding and enabling concepts in strategic delta planning, but only when they enable fruitful continued negotiations in subsequent stages of strategic planning, programming and implementation. The elaboration of consent for strategic choices in each phase thus requires an arena-tailored framework and approach. The latter is needed as, in each phase and arena, there are specific characteristics and requirements for brokering actor consent, for transforming strategic choices into policies, and for subsequent changes in planning and development.

2. Strategic delta planning can act as a mind changer in delta planning, as due to the visioning nature new ways of thinking on how a delta could be managed are introduced and framed. This may range from shifts in delta developments "from exploitation to conservation and restoration" as highlighted for the Po delta and Sacramento-San Joaquin delta, to alternatives for overreliance of fresh water resources in coastal zones as in the deltas of Jakarta and the Mekong river. Wishful thinking – what a delta could look like – could thus materialise in a plan and influence people's minds. Confrontations and contestations with vested interests will occur, that could result in unexpected changes when actors suddenly rally around a plan or leave the arena. Innovative solutions, when abstract and open, leave room for value-based negotiations instead of positional bargaining (Fisher, Ury, and Patton 1991) and, thus, stimulate the possibility of actors stepping in and forming a dynamic pragmatic coalition that expands and consents to a plan through multiple decision-making phases. The extent to which strategic delta planning influences regular planning cycles is difficult to determine, as the contributions were limited to ongoing strategic delta planning efforts. The papers report some evidence for actually changing planning processes. The example of the Wide Green Dike could be implemented as it became a pilot without altering planning procedures. Insights of the Mekong Delta Plan are reflected in political decisions, yet these still largely have to influence ongoing planning processes. The mixed evidence of strategic planning processes influencing day-to-day planning processes is in line with a suite of case studies on failures and success of strategic spatial planning to transform planning at local levels (Poister 2010; McFarlane, Solomon, and Memon 2015; Albrechts, Balducci, and Hillier 2016; Gustafsson, Hermelin, and Smas 2018).

3. Given the mixed evidence provided so far for SDPs to act as planning changers, we conclude that the capacity for strategic-driven change (interpreted as a long-term selective vision for change in delta developments, implementing parts of that vision while acknowledging the uncertain future ahead) is not straightforward nor given. Consent about strategic directions, and their implications at national and local levels, has to be continuously negotiated and obtained. Capacities for strategic-driven change, therefore, have to be present throughout the planning system: as consent cannot be brokered in one go, the strategic directions and their implications have to pass through different stages and phases (e.g., agenda, plan formulation, policy, programming/implementation) and have to pass through different actor arenas (e.g., national and regional policy, line agencies and regulatory bodies, national and local NGOs, end users etc.). The strength of SDPs may then well lie in the persuasiveness of the story it has to tell – how attractive is the future outlay of the strategic choices it portrays, how well does it fit the imagination of present and future stakeholders? The more persuasive the story/image, the likelier it will travel through the different stages and arenas attracting the imagination of stakeholders over time and planning cycles (see also Olesen 2017). Similar insights can be found in the literature on argumentative policy analysis: the importance of arguments and narrative analysis to construct consent among discursive communities is highlighted, but also the risk of communities gathering around their “own” powerful story, producing dialogues among “deaf” discursive communities (Fischer 2003; Hajer and Wagenaar 2003; Fischer and Gottweis 2012).

We would like to end this Synthesis with a few suggestions for further research, as strategic delta planning offers a vibrant research field: due to the vagaries between wishful thinking and vested practices it remains a highly unpredictable planning process that can produce unexpected changes in the ways in which land and water resources are managed in a delta. Moreover, it is scientifically interesting, as strategic planning for deltas is wider in scope (e.g., covering international–national–local scales, multiple topics as diverse as sea level rise, agriculture, environment, land–water use, urban growth and shrinkage) than strategic planning for urban areas, biodiversity or flood risk management (e.g., Hutter 2007; Olesen 2014; Angelstam *et al.* 2017). Empirical studies could examine the full trajectory of a strategic delta plan, from its agenda setting to plan formulation, policy adoption and programming in a 20 year time period, to explore what a plan delivers within one society and political economy (see for instance Wilkinson *et al.* 2013). Consent, innovative ideas, actor coalitions, politics, and planning tools would offer useful entry points and could benefit from an arena-tailored framework and approach to study, in each phase and arena, consent-brokering processes and the extent to which strategic choices are transformed into policies and changes in planning and development. The travails to which the plans and images are subjected in the re-negotiations of consent for each step/phase, and how they are re-shaped by these, may be studied in detail with concepts such as co-evolution (Gerrits 2008; Norgaard, Kallis, and Kiparsky 2009). Due to the stark differences in strategic and regulatory planning, we foresee interesting research on the extent to which strategic delta plans influence regulatory planning, especially as planning systems are generally preoccupied with regulatory planning and capacities for strategic-driven change are not automatically present. A related topic is the relationship between mind changes and changes in delta planning, for instance by studying what makes a plan, image, or story persuasive (Olesen 2017), or what sort of learning (e.g., social, organisational) processes take place while implementing strategies after a plan is formulated (Hutter 2007; Reed *et al.* 2010). Research into tools could focus on the tailoring of tools to the strategic nature of planning

processes, gaps that continue to exist in tools that uncover strategic issues (Hutter 2007), or tools that indicate the social, political and spatial consequences of (envisioned) strategic choices (van den Broeck, 2013).

The contributions to this issue illustrate that moving SDPs through their various stages and arenas is a laborious and concerted effort of iterations – moving on requires acquiring political buy-in and room for negotiated consent, at each step, arena and phase. This exposes an intrinsic dilemma of SDP: avoid being too narrow and too rigid in your planning, or you will risk getting stuck in the process when dissatisfied stakeholders withdraw their consent and opt out; but become too loose and too flexible, what will remain of the strategic value of directed planning? Striking the right balance between the two may well be the essence of strategic delta planning, that we all recognize as being essential to confront our future challenges, but remains elusive to capture in a framework. The contributions to this special issue may not have settled this in a new SDP paradigm, but they have helped to better describe its dynamic character and scope, over time and place.

## Notes

1. We are aware of strategic delta planning initiatives in: the Netherlands (Deltacommissie 2008), United Kingdom (Environment Agency 2012); Bangladesh (General Economics Division 2018), China (Xu and Yeh 2016), Indonesia (Minkman, Letitre, and van Buuren 2019), Myanmar (Royal *et al.* 2014), Vietnam (Royal, Wageningen, and Deltares 2013); Louisiana (CPRA Louisiana 2012), California (Delta Stewardship Council 2013); Mozambique (Deltares and Witteveen + Bos 2014), Kenya (Odhengo *et al.* 2015).
2. Which explains the frequent call from other sectors in Dutch society to institute a “delta-plan” for transport, education, healthcare, etc.
3. The project “Strengthening strategic delta planning in Bangladesh, Vietnam the Netherlands and beyond” ran from 2014 to 2019. More information, including research outputs for science, practice and capacity building can be found on [strategic-delta-planning.un-ihe.org](http://strategic-delta-planning.un-ihe.org).
4. The different contributions highlight how innovations challenge conventional understandings in policy and planning, as they introduce alternatives for flood protection (van Loon and Vellinga 2019; Minkman, Letitre, and van Buuren 2019), groundwater use (Minkman, Letitre, and van Buuren 2019), adaptation to climate change (Hoan, Khoi, and Trung 2019; Korbee *et al.* 2019), agriculture and agribusiness (Hoang *et al.* 2019; Hasan *et al.* 2019), urban growth and participation (Minkman, Letitre, and van Buuren 2019), and more generally offer strategies to alter strategic priorities of delta exploitation to delta restoration, including human use (Gaglio *et al.* 2019; Kraus-Polk and Milligan 2019).
5. The Committee ceased to exist in early 2019, the Mekong Delta Plan is now being taken forward by the Ministry of Planning and Investment

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## Supplementary material

Supplemental data for this article can be accessed [here](#).

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