**Delt Alliance**

# Learning with Wings: collective learning and mechanism for learning
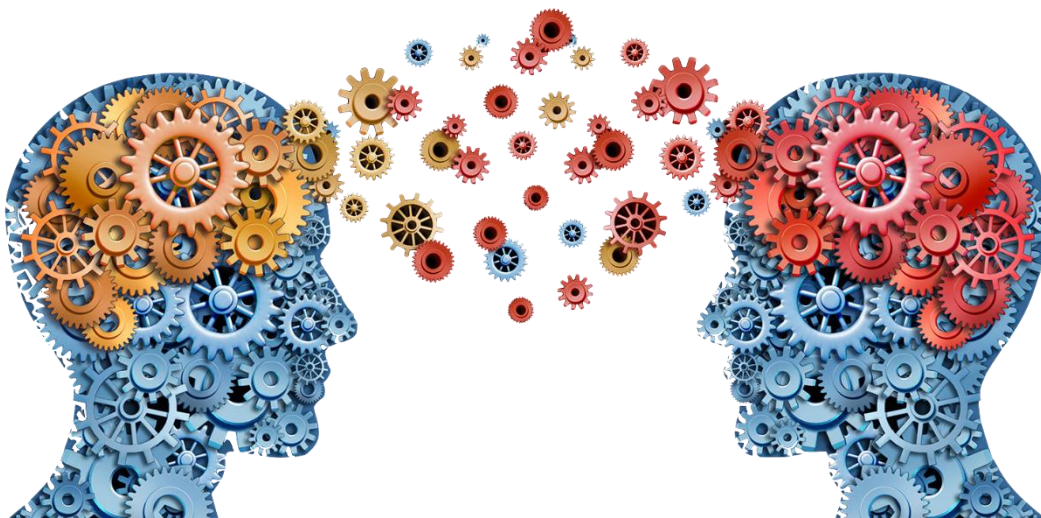
A case study in the Bangladesh Wing of the Delta Alliance

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## 1. Introduction

Worldwide, deltas are rapidly changing areas, characterized by high population pressure, vulnerability (to climate change, flooding, sedimentation, subsidence), and fertile agricultural lands competing with urbanization and industrialisation for space making it highly valuable. In deltas, therefore, it is of utmost importance to continuously adapt and learn to address ever changing circumstances, in order to increase and sustain the resilience of the delta.

The Delta Alliance is a knowledge driven network, working on increasing resilience in deltas. It brings people who live and work in deltas together in so-called wings, which are organized at country or river basin scale. Each wing includes a number of partners. Internationally, the wings operate as more or less autonomous bodies, with a link to the International Secretariat based in the Netherlands. Wings make their own plans independently, using the Delta Declaration as a basis, and exchange information via reporting, the website and social media. Currently, there are 19 wings, globally. The Bangladesh Wing was established in 2011, and covers the delta of the Ganges, Brahmaputra and Meghna rivers. The Wing partners come from different organizations within the country, with a majority based in Dhaka.

As changes related to delta challenges are happening fast (sea level rise, flooding, etc.), it is important to get new knowledge in place in a quick and efficient manner. We thus like to know more about the process in which this is taking place, and what important elements are: how do people, organizations and wings learn. The goal is hence to establish guidance on collective learning in and between wings, with the Bangladesh Wing as a starting point in this study.

## 2. Background on peer learning

"Learning is taken to be a process of long-lasting change in the behaviour or the general ability to behave in a certain way, which is founded on changes in knowledge and beliefs", is how Siebenhüner (2005, p.4) describes learning generically. Learning is increasingly recognized as an essential element of natural resources management, i.e. it is one of the foundations on which adaptive (co-)management is built (Huitema *et al.*, 2009; Plummer & FitzGibbon, 2004). As described by van Herk *et al.* (2015, p. 555), a growing basket of literature places specific emphasis on the need of among others learning processes in an attempt to address the kinetics of physical systems and the multi-objective real world.

Involving collaboration and communication between peer professionals from various organisations, learning within wings and between wings can be seen as form of peer learning. Peer learning can be defined as learning from and with each other, i.e. can be seen as two-way reciprocal activities related to learning (Boud *et al.*, 2014). Peer learning thus underpins simultaneously learning while providing a contribution to the learning of others (Boud *et al.*, 2014; Eisen, 2001). This concept is not limited to but often described in the context of (academic) curricula, and encompasses a broad range of activities, including sharing of experiences, ideas and knowledge among participants (Boud *et al.*, 2014). Peers as such share positions as fellow learners, and share a closely related or common development objective (Boud *et al.*, 2014; Eisen, 2001).

## 3. Methods

Assessing learning can be done by making an inventory of one's own work, to build metacognition skills (Doyle, 2016). In this study, this has been conducted on individual level, by dissemination of a structured questionnaire. This survey has been designed incorporating the technique mentioned by Doyle (2016), and furthermore addresses to what extent organisations are involved in learning networks, and how and if that is facilitated by the organisation. Answering the questions did seldom take more than 30 minutes, irrespective of whether it has been done online of offline. The questionnaire consists of qualitative and quantitative parts. The first part (questions 1-9) poses open questions regarding how activities are seen, i.e. in particular with regard to what is new, and which role the DABW plays. The second part (questions 10-23) consists of closed questions that can be answered with a rating from 1 until 5. These quantitative questions are relating to collaboration and participation in learning networks, facilitation of peer learning, and the way learning or sharing is stimulated. The full questionnaire document can be retrieved from Annex B: Survey documentation. Respondents have been targeted on the criterium that their organisation committed itself to participating in the DABW. An attempt has been made to capture responses from a variety of organisations involved in the Bangladesh Wing, to prevent biased results.

After survey design, online software toolbox *SurveyMonkey* (available at [www.surveymonkey.com](www.surveymonkey.com)) has initially been used for dissemination of the questionnaire among partners of the Bangladesh Wing. This software allows for survey designing, sending invitations to participate in the survey, data acquisition, and provides the option to present an overview of the results. After observing a low amount of responses using SurveyMonkey, the questionnaire has additionally been sent per email to several key partners in the Bangladesh Wing, on which they could reply with their responses attached. Thirdly, additional data have been collected during individual interviews, in which the questions have been asked in a face-to-face interviewing session. In all three manners of data acquisition, the same questions have been posed, in the same order.

After processing obtained results, a meeting can be planned as follow-up to this report to discuss the results of the survey with the Steering Committee of the Delta Alliance Bangladesh Wing.

## 4. Results

Thirteen responses to the survey have been recorded, originating from a variety of respondents employed by institutes and organisations in Bangladesh. Input to this survey has been provided by professionals employed by five out of seven organisations represented in the Steering Committee of the Bangladesh Wing. In the Steering Committee, representatives of IWM, BUET, CEGIS, BWP, BCAS, BWDB and WARPO are participating. Respondents to this survey are employed by IWM (4 responses), BUET (2 responses), CEGIS (2 responses), BWP (1 response) and BCAS (1 response). Two organisations participating in the Steering Committee, i.e. BWDB and WARPO, are not represented by the respondents of this survey (they were invited, but no response was received). One organisation that initially signed up for participation in the Bangladesh Wing, but does not participate in the Steering Committee, was incorporated in the survey with one response. The full list of respondents including the names of the organisations they work for can be retrieved from Annex A: List of respondents.

### 4.1 Qualitative results

This subsection presents qualitative results retrieved from the first part of the questionnaire. Per question, the general tendency in responses is addressed, and when applicable a quote is provided. Some questions are grouped together because they take a similar approach.

*Can you reflect on the your own activities, the activities of your organisation and those of the DABW?*
Out of the eleven responses on these questions, four responses address lack of coordination within the Wing, and five address disengagement by lack of activities. ''DABW coordination is not structured. It has unplanned activities. Mission, vision, target & objective are not clear to my organisation as well as to me.'' Other responses address the activities of the Wing, e.g. organising workshops and seminars, whether or not in relation to their own work, or other topics.

*What are the topics and outputs you foresee as collective activities of the Wing in the coming 5 years?*
Answers are covering a broad range of topics, ranging from conceptual ones like capacity building activities, strategy development for the 8th Five Year Plan and the BDP2100, introduction of novel principles and concepts related to water management, to more concrete examples of assessment of ground water resources, river bank protection, sediment management, and climate modelling. Some mention collaborative scientific efforts like jointly publishing papers, organising workshops, designing long-term or investment plans or organising activities.

*Do you need knowledge, skills, or capacity development for these activities?*
All respondents agree there is a need. They, however, do not agree on what that need would look like, and mostly do not provide argumentation for their view on a needs inquiry. Little details were provided on which kind of knowledge, capacity or skills would be required. While eight out of eleven responses agree there is a need for new knowledge, nine agree on the need for capacity building. Skills are considered least required with only six responses addressing it.

*What could be practical strategies to address these needs?*
Two strategies are proposed. Firstly, organising DA activities like meetings, workshops, or seminars is proposed most frequently. Secondly, initiating trainings or research specifically

related to capacity development were mentioned. Some respondents also mention other topics.

*What are the roles of DABW in your observation?*
The general tendency here is that there are two roles the DABW is playing, with criticism being ventured on both roles. The first group of respondents agrees the role of the DABW is either not clear or considered ineffective (five respondents, out of twelve). Criticism includes the observations that there is lack of effective communication among coordinator and members and no action is undertaken. One respondent describes the Wing as ''dysfunctional'', while another calls it ''a loosely connected partner organisation meeting very irregularly''. The second group sees the Wing as facilitator or coordinator (four respondents, mentioning e.g. coordinating implementation of the BDP2100, or project coordination). Still, criticism is ventured that coordination is ''not up to the mark. There is a gap between coordination processes''.

*What are your recommendations to improve the functioning of the Wing?*
Three primary topics are mentioned here. First, a more participatory approach is advised (n=6), where more stakeholder involvement or participation is advocated. As one respondent puts it: ''Need to involve more stakeholders, need some strategy to encourage the stakeholders to contribute more on the DABW''. Secondly, a better annual planning or long-term visioning is advised (n=6), with suggestions relating to annual calendars, participatory planning, or defining a long-term strategy. Lastly, some respondents indicate the Wing functioning can be improved by increased financing (n=4).

## 4.2 Quantitative results

This subsection presents results from the second part of the questionnaire. This part of the survey consisted of questions, where answers ranging from 1 to 5 could be given. These questions touch upon a numbers of topics related to peer learning and information sharing both internally and beyond the boundaries of one's own organisation. For example, it is addressed to what extent water professional in Bangladesh turn to internal, national or international colleagues when faced with problems. Additionally, there are questions relating to how and if management of an organisation facilitates participation in (learning) networks. An overview of the average scores can be retrieved from Figure 1.

*Figure 1: Average responses to quantitative questions*
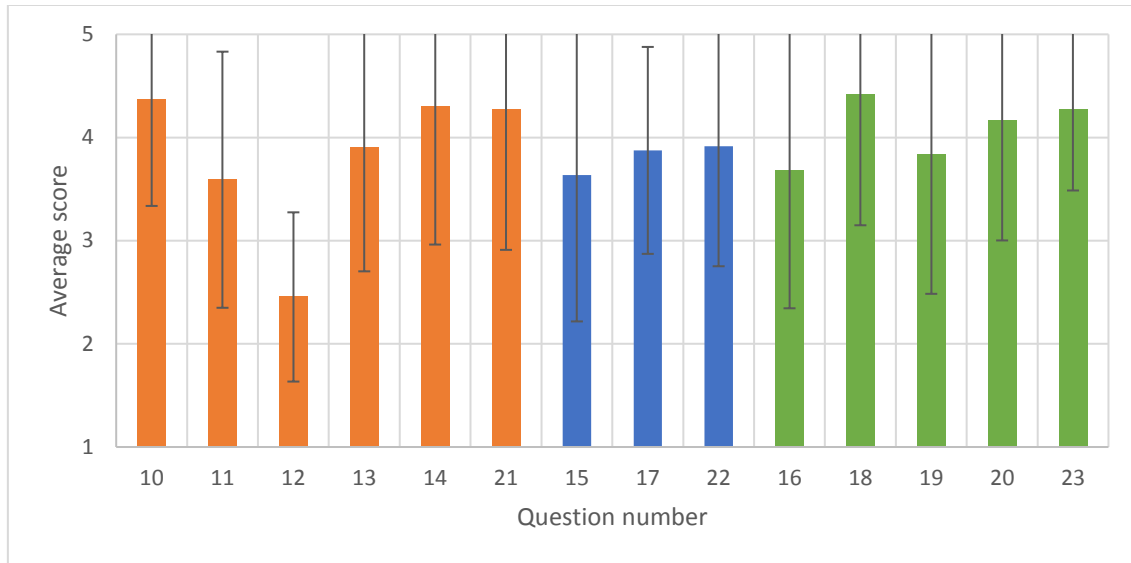


This graph shows the average response for each quantitative question, with error bars indicating the average value plus or minus one standard deviation. Upon inspection of the question numbers below the graph, it can be seen they have not been presented sequentially. Resulting from efforts that group questions of a similar nature together using the colours orange, blue, and green, the question numbers below the graph have thus been adapted accordingly. Bars indicated with orange relate to questions about actual collaboration or participation in learning networks. Indicated with blue are questions concerned with organisational facilitation of peer learning. Green bars relate to questions about the attitude towards peer learning and the way learning or sharing is stimulated.

A brief summary of the results presented in Figure 1 can be found below.

- The error bars are rather large; most likely due to the limited number of respondents.
- Most results are on average covering only a small range, scoring between 3,6 and 4,3.
- The attitude towards learning and sharing (Q18) scores highest together with internal peer collaboration for problem solving (Q10). The lowest score is international peer collaboration for problem solving (Q12), followed by resource allocation for participation in learning networks (Q15).
- There is a clear downwards trend from question 10 until 12, where questions relate to peer collaboration for problem solving in an internal (Q10), national (Q11) and international (Q12) context. This makes sense: it is more likely internal colleagues are approached when facing problems, before national colleagues or even international ones will be asked.
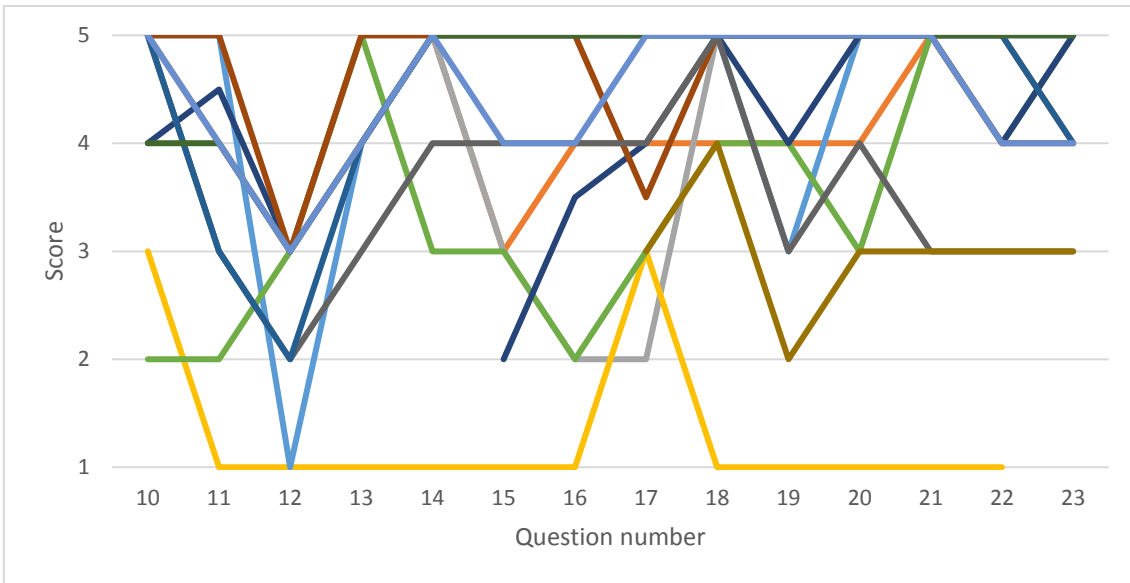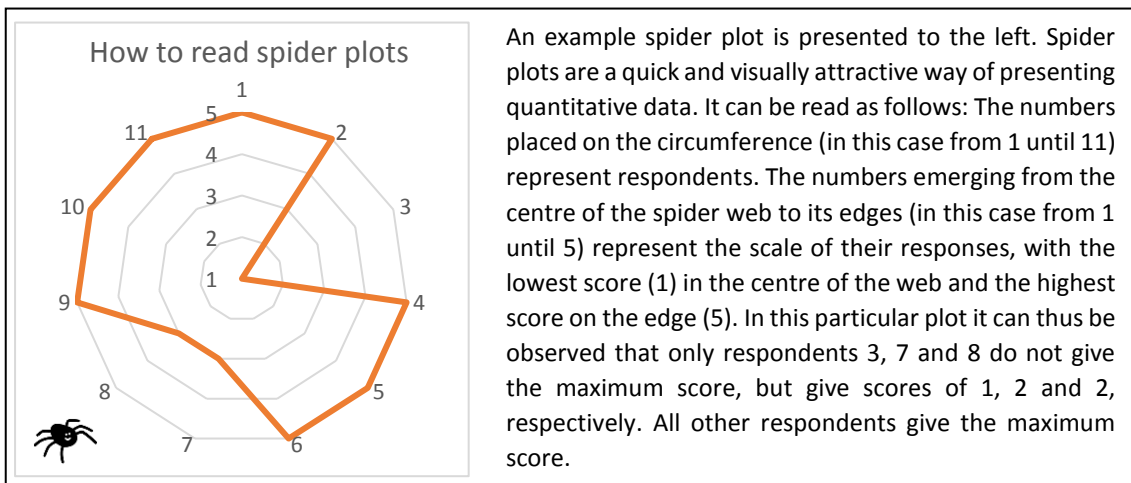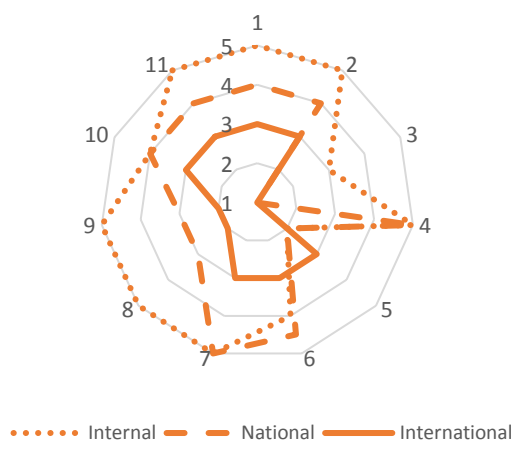
Figure 2 is an illustration of individual responses. It shows one respondent has a tendency to give low scores, whereas most respondents tend to give rather high or even maximal scores. Further interpretation is up to the reader.

The following two pages present a series of spider plots. Most spider plots came into being based on the responses on one question. Exceptions are the first two spider plots, based on Q10-12 and Q13-14, respectively. Missing data points, in case a question has not been answered, have been omitted for visualisation purposes. Each spider plots therefore presents between ten and twelve responses. It can be observed that there are large individual differences in response per question. The spider plots stick to the same colour structuring as presented in Figure 1, and a brief explanation on how to read a spider plot has been presented below in Box 1.
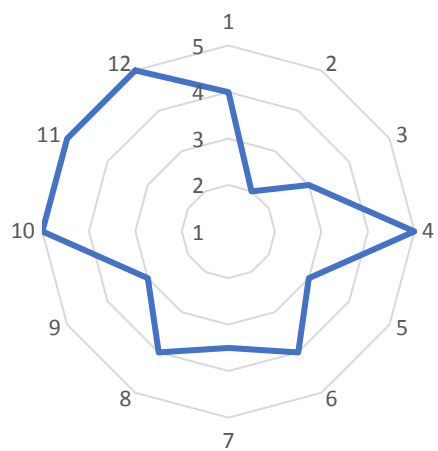
*Box 1: A spider plot illustration*



An example spider plot is presented to the left. Spider plots are a quick and visually attractive way of presenting quantitative data. It can be read as follows: The numbers placed on the circumference (in this case from 1 until 11) represent respondents. The numbers emerging from the centre of the spider web to its edges (in this case from 1 until 5) represent the scale of their responses, with the lowest score (1) in the centre of the web and the highest score on the edge (5). In this particular plot it can thus be observed that only respondents 3, 7 and 8 do not give the maximum score, but give scores of 1, 2 and 2, respectively. All other respondents give the maximum score.

## Peer collaboration for problem solving

Internal · · · · · · National – – – International ——

## Availability of tools for information sharing

## Participation in learning networks

National – – – International ——
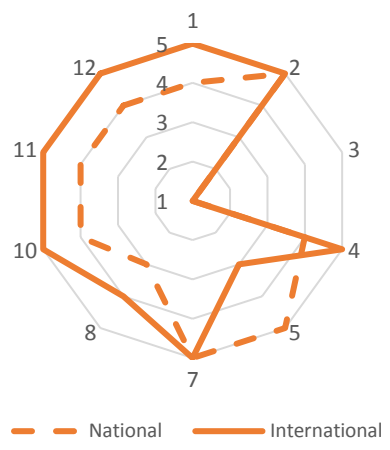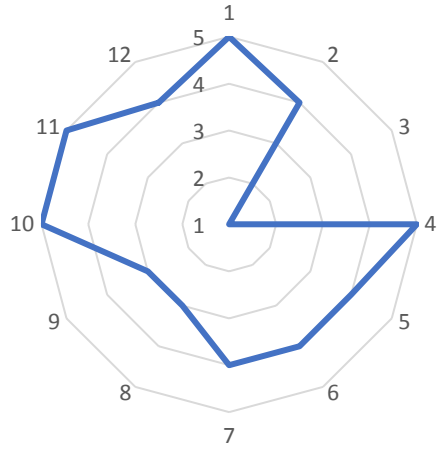
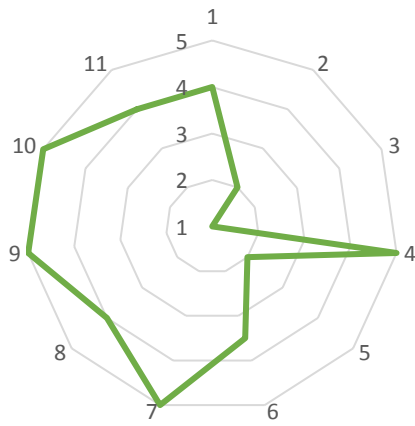## Resource allocation for learning networks
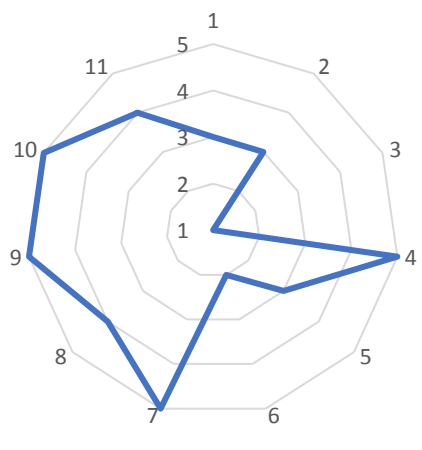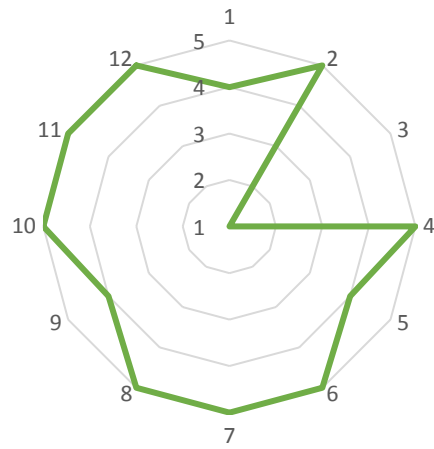
## Collaboration with knowledge institutions
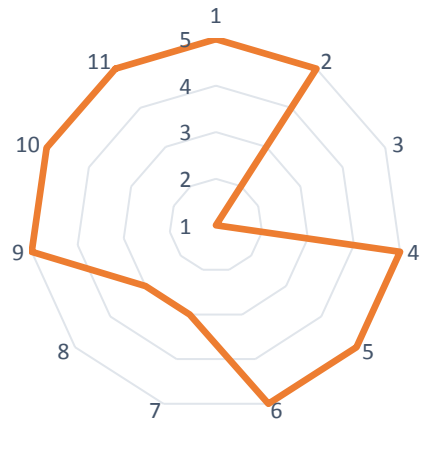
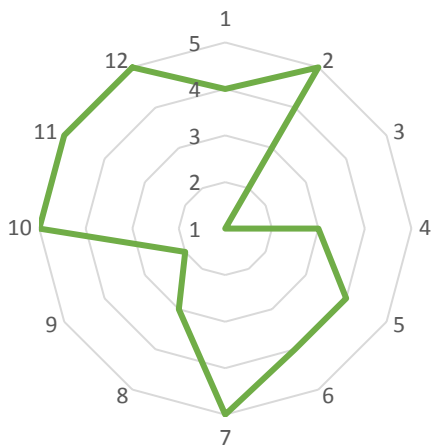## Availability of knowledge management structure
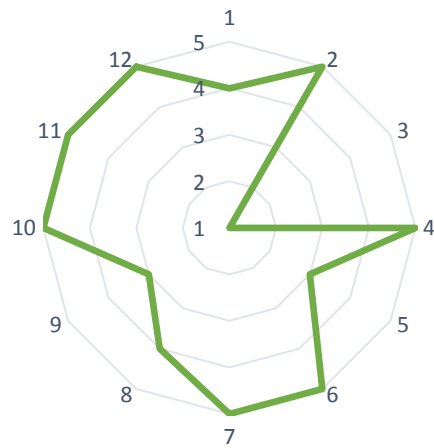
Management support for learning networks

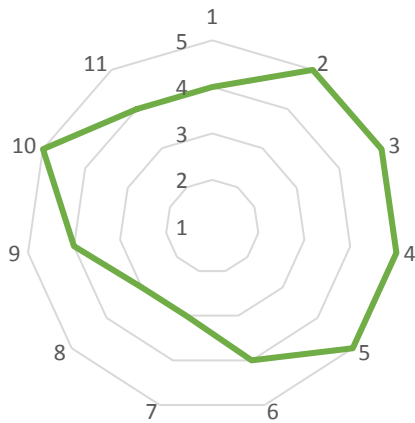Attitude towards sharing & learning

Stimulation of learning by experimentation

Support for internal information sharing

Performance monitoring & strategy adjustment

## 5. Discussion and conclusion

This study has focused on the process in which learning is taking place in the Delta Alliance Bangladesh Wing, and what important elements are. It attempted to capture how people and organisations in the Bangladesh Wing learn.

First of all, it has to be noted that the number of respondents of the survey is limited. The thirteen responses collected cover a range of organisations related to delta management and the DABW, and therefore a range of professionals in this field. Input from five out of seven organisations represented in the Steering Committee of the Bangladesh Wing has been obtained. All were invited to participate.

Among the respondents, learning seems mostly a subconscious and unorganised process, with little specific attention. Learning does not seem to be perceived as an activity in itself. New work is taken up (e.g. BDP2100 or the 8th Five Year Plan), but activities therein are not specifically related to learning. Nonetheless, the majority of respondents agrees there is a need for new knowledge and capacity building.

To facilitate learning, participation in activities to share knowledge, and initiating training or joint research projects are suggested. In this, the DABW may have a coordinating role, but as of yet the DABW is not deploying such role, leaving room for interpretation of its coordinative function. There is a need felt among the respondents to increase their knowledge and capacity to execute their work, and a need to share knowledge; features which in themselves can be considered a form of reflection. Yet, sharing knowledge is being done without explicitly mentioning this as learning or part of a learning process. Learning by doing is commonly practiced – unorganised, mainly by taking up work alone or together with colleagues from the same organisation. No mention is made of who is playing a role as facilitator.

As mentioned in the introduction, this study attempted to establish guidance on collective learning in and between wings, with the Bangladesh Wing as a starting point. This may be repeated in other wings. It is recommended to add a question linking the learning experiences that professionals may have, to concrete new (project)activities.

Having executed this survey study, where it was observed that the number of respondents is limited, no full inventory could be made of how respondents address learning while executing work or taking up new work. By absence of that question, this study thus did not fully clarify how learning takes place as experienced by Bangladeshi water sector professionals, and how the learning process relates to personal and professional skills of the respondents. This may also link to the reflexive capacity of the water sector professionals involved. It means in practise that a standard guidance could not be established. As already stated above, the study still could be interesting for other wings to repeat and provide insight.

Seeing the developments in Bangladesh, where new work is emerging like the Bangladesh Delta Plan, containing concepts like Adaptive Delta Management, longer term planning using scenarios, information services at national level (knowledge portal), it may be concluded that learning does take place based on professional interest and implementation of (new) projects.

## 6. Recommendations

It is recommended to organise a DABW meeting, in which the survey and its responses and conclusions can be discussed. To guide this meeting, several open questions are suggested below, related to DABW functioning in general and to peer learning. These questions have directly been derived from frequently mentioned survey responses.

Regarding DABW functioning

- Are the roles and responsibilities of the DABW clear to all DABW participants?
    o Some consider there is lack of initiative of the coordinator
    o Some point out there is no engagement for them in the Wing
    o Some consider there is lack of or insufficient coordination

- How can DABW communication be improved?
    o Emphasize need for capacity, skills, knowledge
    o Active role coordinator, or rotate this role
    o Initiatives from wing participants
    o Stimulation of information sharing

- What could Wing participants do to improve Wing functioning, individually or as organisation? Collaborate on e.g.:
    o A participatory approach
    o More joint activities
    o Improved planning, e.g. by annual calendar

Regarding peer learning

- What does the peer learning process of DABW participants look like?
    o Subconscious and unorganised, little specific attention
    o There is a need for new knowledge
    o Learning by doing commonly practised

- What are opportunities to boost peer learning?
    o A participatory approach
    o Facilitation of knowledge exchange
    o Understand the dynamics between new and existing knowledge

Another point is the spatial scale in which this study took place: the DA Bangladesh Wing. Developed as a tool to 'measure' the learning process and important elements therein, this study focused specifically on the Bangladesh Wing. Some of the learning at national level concerns activities that quickly become 'normal' to those in Bangladesh, while at international level these are new concepts and skills. The DA interacts globally. Having executed this survey study in the Bangladesh Wing, it is thus interesting to widen the study and consider recent national developments in climate information services (e.g. the Bangladesh Delta Plan's Knowledge Portal). Such services act as an opportunity for learning and capacity building in the wider water sector. It will be interesting to study how this newly learned expertise can be used into other deltas. We expect to contribute with such study to a better understanding how learning *between* Wings can be effectuated.

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## Annex A: List of respondents

These respondents provided valuable input to the questionnaire. They are listed alphabetically in the table below.

| Name | Employed by |
| --- | --- |
| Saiful Alam | Institute of Water Modelling (IWM) |
| Eng. Gopal | Local Government Engineering Department (LGED) |
| Azharul Haque | Bangladesh Water Partnership (BWP) |
| Prof. Monowar Hossain | Institute of Water Modelling (IWM) |
| Atiqul Islam | Dhaka University of Engineering & Technology (DUET) |
| Jannatul | |
| Abu Saleh Khan | Institute of Water Modelling (IWM) |
| Prof. Shah Alam Khan | Bangladesh University of Engineering & Technology (BUET) |
| Zahirul Haq Khan | Institute of Water Modelling (IWM) |
| Prof. Umme Kulsum Navera | Bangladesh University of Engineering & Technology (BUET) |
| Maminul Haque Sarker | Center for Environmental and Geographic Information Services (CEGIS) |
| Abu Syed | Bangladesh Centre for Advanced Studies (BCAS) |
| Waji Ullah | Center for Environmental and Geographic Information Services (CEGIS) |

1. What are the important topics and outputs that you have worked on in the last 5 years, both individually, as an organization and as DABW?

|  | Individual | Organization | DABW |
|---|---|---|---|
| Topics |  |  |  |
| Outputs |  |  |  |

2. When considering the various answers in question 1, what do you notice?
3. What is an explanation?
4. What are the important topics and outputs you foresee as a collective activity of the Wing in the coming 5 years?
5. For these anticipated activities, do you need new knowledge, skills or capacity development, individually, as an organization or as DABW?
6. What could be the practical strategies to address these needs?
7. What are the current roles of DABW in your observation? What is your role in relation to DABW?
8. What are your recommendations to improve the functions, efficiency and transparency of the Wing? You may like to include explanations to elaborate your response.
9. Any remaining remarks you wish to share?

10. We (my team members/colleagues) turn to our peer group-colleagues (internal) when faced with problems (Range: 1-5; 1 = not much; 5 = very much)

11. We (my team members/colleagues) turn to our peer group-colleagues (national) when faced with problems (Range: 1-5; 1 = not much; 5 = very much)

12. We (my team members/colleagues) turn to our peer group-colleagues (internationally) when faced with problems (Range: 1-5; 1 = not much; 5 = very much)

13. Our organization is participating in international (learning) networks
(0=0 network, 1=1 network, 2=2 networks, 3=3 networks, 4=4 networks, 5>5 networks)

14. Our organization is participating in (learning) national networks
(0=0 network, 1=1 network, 2=2 networks, 3=3 networks, 4=4 networks, 5>5 networks)

15. We have allocated resources (e.g. funding, time, human resources) to participate in learning networks (Range: 1-5; 1 = not much; 5 = very much)

16. Our management supports/is actively involved in (learning) networks (Range: 1-5; 1 = not much; 5 = very much)

17. We have tools available to make the sharing of information and learning more accessible (e.g. translation into English, dedicated website) (Range: 1-5; 1 = not much; 5 = very much)

18. We have an open, positive attitude towards sharing and learning (e.g. attending conferences, workshops, etc., is stimulated) (Range: 1-5; 1 = not much; 5 = very much)

19. We stimulate learning by experimentation (doing) (e.g. involved in pilot projects, research projects) (Range: 1-5; 1 = not much; 5 = very much)

20. In our organization, we encourage cooperation and support sharing of information (e.g. presenting in internal meetings) (Range: 1-5; 1 = no; 5 = very much)

21. We collaborate with universities and/or academic institutions (on an annual basis, 0=0 universities and academic institutions, 1=1, 2=2, 3=3, 4=4, 5>5 or more)

22. We have formally organized the capturing and transfer of (new) knowledge (knowledge management strategy, knowledge storage facility,..) (Range: 1-5; 1 = not much; 5 = very much)

23. We monitor the performance of our projects and use the outcomes to adjust our strategy (Range: 1-5; 1 = not much; 5 = very much)