Bhutan Journal of Management Vol 2, No 1 (February) 2022: 139-164

Assessing Water Resource Management in Bhutan from a Whole-of-Government Approach: A Perception Study

Phurpa Lhamo[*] *Indraman Chhetri*[+]

Abstract

Bhutan is known for its abundant water resources. Bhutan Water Vision 2025 envisages water as the most important natural and self-sustaining resource of the country. Similarly, Water Policy 2007 emphasises on an integrated approach to water management to address balanced development and thereby contributing to the national goal of Gross National Happiness (GNH). However, management of water is resulting in complexity with the proliferation of water-related agencies. The need to address water management issues from a system perspective stemmed from the Organisational Development Exercise (ODE) of the Royal Civil Service Commission (2014-2017) during the review of agencies' mandates followed by other subsequent reports. Therefore, this study focused on assessing the emerging water management issues in Bhutan from a whole-of-government approach. The survey findings strongly supported the existence of a fragmented approach in water management and urged the need for collaboration in the future. In general, it is found that there is no dearth of policy frameworks and guidelines but the issues revolve mostly around lack of effective implementation. Majority of the respondents supported the idea of establishing a central agency to synchronise the efforts of water management agencies. The water flagship programme initiated by the government during the twelfth five-year plan is expected to address many of the existing cross-sectoral issues which, however, will require tweaking in the existing policy and subsystems, to some extent, besides the change in mindsets to work in a new collaborative culture.

Keywords: Act; Competent Authorities; Flagship Programme; Fragmented Approach; Implementation; Policy; Royal Government of Bhutan; Water; Water Management Agencies; Whole-of-Government Approach

[*] Centre for Bhutan and GNH Studies, Thimphu, Bhutan. Corresponding author: phurpa608@gmail.com

[+] Royal Institute of Management, Thimphu, Bhutan

Introduction

Bhutan, located in the eastern Himalayas is one of the water abundant countries with per capita mean annual flow availability of approximately 109,000 cubic metres (Kuensel, 2017). However, despite its abundance, many feel that this resource is not equitably and optimally utilised. His Majesty the King of Bhutan aptly remarked,

> ……Bhutan has abundant water resources compared with most of the countries in the world. Yet, there is no water in many places where it is needed, leaving large tracts of productive land fallow. Water is also a cause of conflict between communities and a predicament for rural and urban settlements alike. Our food import in the past year was over Nu. 7 billion while about 78,000 acres of arable land remained fallow (Kuensel, 2020).

These statements highlighted clearly that there is significant scope to improve water management of the country. While climate change is going to pose a serious challenge to the water resources of the country, however, a sound water management system will be inevitable to harness this available resource to its optimum capacity towards revitalising agriculture production, addressing food security, facilitating human settlements and industrial development, and promoting overall economic development of the country.

Bhutan Water Vision 2025 envisages water as the most important natural and self-sustaining resource with its emphasis on making it available in abundance to meet the increasing demands (NEC, 2014). Bhutan Water Policy 2007 emphasises on an integrated approach to water management to address balanced development and thereby contributing to the national goal of Gross National Happiness (GNH). Water Act of Bhutan 2011 captures the essence of the water vision and water policy of the country assuring access of adequate, safe and affordable water to enhance and maintain the quality of life and integrity of natural resources (NEC, 2011). The Act specifies National Environment Commission (NEC) as the apex body in the overall water management of the country. According to the Act, NEC can designate any ministry, organisation, agency or committee as a competent authority to effectively enforce and implement the provisions under the Act. Some of the main competent authorities specified in the Act are the Ministry of Works and Human Settlement (MoWHS), Ministry of Health (MoH), Ministry of Agriculture (MoA), Ministry of Economic Affairs (MoEA), Ministry of Home and Cultural Affairs (MoHCA), Ministry of Education (MoE), local governments along with Dzongkhag Tshogdu (District Council) and Gewog Tshogde (County Committee), and Bhutan Electricity Authority. Civil society organisations (CSOs) and media are also expected to play their roles in education, public awareness and promoting public-private partnership in water management of the country. The Act also directed for the preparation

and periodic update of the National Integrated Water Resource Management Plan for coordinated development, management, conservation and efficient use of water resources along with River Basins Management Plans. In order to enforce the objectives and purposes of the Water Act 2011, the Water Regulation of Bhutan 2014 was formulated.

While many agencies are involved in water management of the country which is encouraging from the overall governance point of view, however, there are also territorial as well as mental boundaries emerging between the competent authorities in the quest for fiercely guarding their specific mandates. For example, we have heard commonly on allegations that the quality of water would vary significantly between a Dzongkhag headquarters, it's Gewogs and Thromde (located in the same Dzongkhag) although the water could flow from the same source. Quality, in this case, would vary depending on the availability of facilities, funds and personnel expertise in each of these agencies instead of looking at water and its quality or its seamless accessibility from the overall basic needs of the citizens. Similarly, issues on the duplication of resources among the central and local agencies were also reported in the past on water management. Concerns were expressed that some central agencies continued to get directly involved with infrastructure development projects at the local level despite having adequate capacities across Dzongkhags to carry out such works. Water management issues surfaced strongly during the review of agencies' mandates under the Organisational Development Exercise (2014-2017) of the central and local agencies carried out by the Royal Civil Service Commission (RCSC). Subsequently, the water management problem among the agencies was categorised as one of the pertinent cross-sectoral issues by the RCSC pointing out the need to look at such an issue from a broader system perspective, rather than leaving it to specific agencies alone. Some of these issues are supported by the National Assembly's Environment and Climate Change Committee (ECCC) of Bhutan which highlighted that water management agencies lack cooperation among themselves and called for urgent collaboration between NEC and relevant agencies, especially to draw a protocol on the establishment of a proper data centre and data sharing on issues related to water (Rinzin, 2020).

Towards addressing many of the emerging issues especially related to drinking water and irrigation, water management of the country is prioritised under the water flagship programme during the ongoing twelfth five-year (2018-23) of the Royal Government of Bhutan. Further, the government is assessing to form an independent office under the water flagship programme. However, it is not certain whether the independent office would be formed as a water agency, an institution, or an independent body. The government is also exploring to involve education and management institutions including

the Royal University of Bhutan (RUB) and Royal Institute of Management (RIM) to support efficient water governance, water policies and water technologies (Rinzin, 2020). While initiatives are being undertaken by the government to address this cross-sectoral issue, no formal research is undertaken yet to examine water management from a broader management perspective.

This study focused on assessing the emerging water management issues in Bhutan from a governance perspective. Specifically, this research aims at finding out key issues in water governance and management including confirmation of some of the much talked-about water issues in the public, assessing whether there are adequate policy guidelines in place to manage water resources and assessing other impediments if any associated with coordination, resources, and administrative culture and support. The findings from this study are expected to create wider awareness and provide professional inputs towards improving water governance in the future as desired by the government.

This paper comprises five sections: Section one relates to the introduction of the study. Section two comprises literature review which is sub-sectioned into theoretical literature on the whole-of-government approach, and water governance and management followed by a conceptual framework developed for the purpose of this study. Section three relates to discussions on research methods with its sub-sections into research design, sampling technique, data collection and data analysis. Section four focuses on results and discussions while section five is on the conclusion, recommendations and limitations of the study. The paper concludes with notes of acknowledgment.

Literature Review

Theoretical Literature Review

The whole-of-government approach (WoGA) concept denotes a holistic approach and it works as a reaction to the fragmentation caused by New Public Management (NPM) reforms (Christensen & Laegreid, 2006). The main drawback of NPM was its structural disaggregation which led to deficient coordination, duplication and even waste (Rhodes, 1994). It developed a siloed mentality among agencies reinforced by competition rather than collaboration. As a result, WoGA aimed at addressing the "wicked" issues confronting the public sector organisations both at administrative and policy levels (Richards & Smith, 2006). This approach was presented as the opposite of "departmentalism," "tunnel vision", and "vertical silos" with focus on creating synergies by bringing together relevant stakeholders to offer citizens seamless access to services (Pollitt, 2003).

According to OECD's (2006) study, clear political guidance and leadership is the starting point for an effective WoGA providing the actors with an understanding of the importance of their involvement. The study points out the need for clarity on who plays what role in creating an integrated approach. In order to improve the effectiveness of different actors involved, they need to be linked to a set of broader joint objectives. Collaborative working is undermined by approaches that become fragmented and are guided by different (and potentially conflicting) departmental objectives. Creating coordinative structures inside existing central structures, increasing the strategic leadership role of the cabinet, and focusing more on following up on central decisions are typical hierarchical efforts in Australia intended to put pressure on the sectoral authorities in order to force them to collaborate and coordinate better (Halligan, 2006).

Kernaghan (2005) highlighted four governance barriers to Integrated Service Delivery (ISD) in Service Canada, a service delivery model that was designed in response to the fragmentation and disjointed approach previously employed to deliver services to Canadian citizens. These are political, structural, operational/managerial and cultural barriers. The continuing dominance of silo structures within and across departments and across jurisdictions are barriers highlighted as inhibiting progress with the horizontal government in Canada (Flumian et al., 2007). Political barriers are associated with little public recognition of ministries for engaging in ISD, an emphasis on the vertical dimension of government, potentially jeopardising political support for ISD initiatives. Structural barriers cover inter-jurisdictional tensions and political competitiveness as well as horizontal governance issues associated with the lack of dedicated funding and the vertical nature of the budgetary process. Operational and managerial barriers incorporate lack of inter-operability (of technological, pay, reward and recognition systems that work against horizontal working); and the security of electronic transactions in particular which can seriously inhibit information sharing across departments. Finally, cultural barriers include an emphasis on the vertical dimension of government and support of departmental, rather than inter-departmental initiatives which work against horizontal collaboration (Flumian et al., 2007; Kernaghan 2005).

The WoGA concept believes strongly in multiple actors in society towards creating synergetic outcomes. It believes strongly in the principles of unity of direction (vision) along with its key values such as responsiveness, transparency, consensus building, equity and inclusiveness, and accountability. This concept of governance is highly relevant to the context of Bhutan as the country is already transiting away from the traditional public administration model towards a governance model with an increasing focus

on nationally desired outcomes (national key result areas) and sustainability. The time has come for us to graduate from an inputs and rules-obsessed system (associated with traditional public administration) to an outcome-based governance system. In fact, this new model has prevailed over both the traditional public administration and market-based model (NPM). Incorporating the principles and practices of WoGA will further encourage and synchronise the efforts of all key actors in the Bhutanese society including the private sectors and civil society organisations towards achieving our national goals with the government taking a facilitative role in the overall governance.

Water Governance and Management

Water constitutes a sector that overlaps with many other sectors and itself has an array of quite different interests, stakeholders with varying mindsets and consequently notable governance challenges (Varis, Enckell & Keskinen, 2014). According to Bucknell (2007), it is not enough to invest only in water infrastructure for water resource management. Water governance includes decision making about water storage and types of water use. Further, if government agencies are to play an important role in good water resource regulations and effective service delivery, it is crucial they invest in their staff as well such as job training, and take advantage of the IT revolution to develop effective information systems for management and communication. Ling (2002) emphasised on building a partnership to work together by avoiding agencification, isolation, and departmentalism.

According to Holley and Sinclair (2014), Australia's approach to collaborative water governance (CWG) is embodied in the National Water Initiative which sets out high-level planning principles and a vision of community involvement but leaves it to each state and territory to determine how best to undertake planning activities (Gray, 2012). Collaborative water governance in the USA is found in watershed planning and landowner cooperatives. In the European Union, it is expressed via increased engagement of stakeholders under the Water Framework Directive while in New Zealand, there has been growing experimentation with water collaboration under the Resource Management Act 1991 (Holley & Sinclair, 2014). Many states in India have implemented laws transferring responsibility for the management of irrigation systems to farmers towards improving decentralised service delivery performance and empowering stakeholders. Morocco and Jordan have private sector involvement in water supply services while Morocco and Egypt have embarked on public-private partnerships for irrigation. Water governance in Singapore is one of the best in the world (Octastefani & Kusuma, 2016) where the Public Utilities Board (PUB), a

national water agency and a statutory board under the Ministry of the Environment and Water Resources (MOEWR) manages the entire water cycle of the country through the involvement of 3Ps (People, Private, Public) in the management of water resources (Public Utilities Board, 2019).

Civil Society Organizations (CSOs) have played an important role in keeping social and environmental issues on the radar of investment, particularly in South Asia (Bucknall, 2007). According to the report of IUCN (2018), research and development are seen as a core area of CSO's engagement. From the governments' standpoint, their contribution is useful as they collect and supply valuable data on water issues from remote areas or on a specific topic, thereby informing governments about on-the-ground realities. CSO is seen as a useful partner in designing more effective, inclusive and holistic policies and also providing support to their implementation.

The water management in Bhutan is characterised by the successful incorporation of environmental concerns since the 1970s and 1980s by moving away from single-purpose engineering works prevalent in the 1960s (irrigation schemes and hydropower plans). The water policy of the country promotes the involvement of multiple stakeholders in the planning and management of watershed conservation programmes. The greater emphasis on sustainable development since the 1990s urged the need to adopt a comprehensive system of water resource management based on Integrated Water Resources Management (IWRM) which became a new paradigm (Asian Development Bank, 2016).

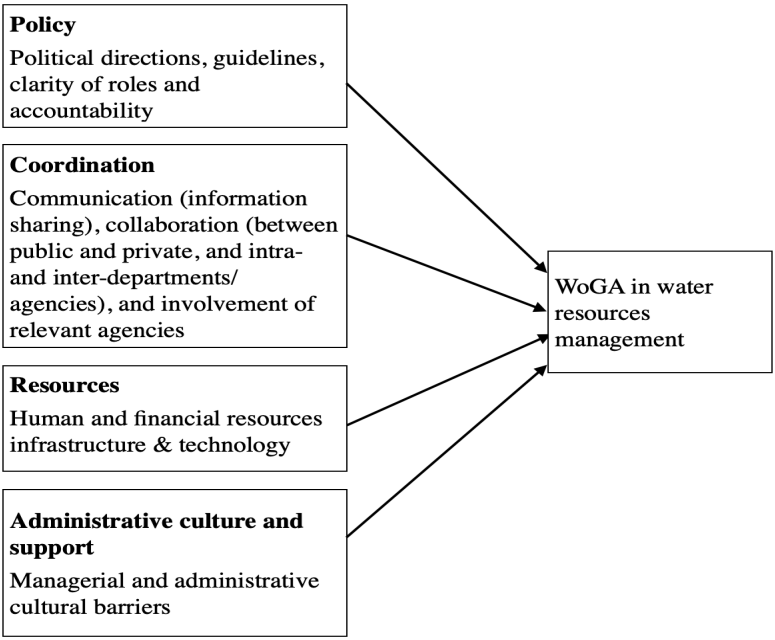
While the IWRM concept is adopted by many countries around the world to make institutional reforms in water management, Varis et al. (2014) argued that IWRM is not implemented quite successfully mainly due to its incompatibility with the horizontal integration across sectors which are characterized by multi-layered and pluralistic systems. This view is supported by Biswas (2004) who denounced IWRM mainly due to its incompatibility with political institutions. In the process of translating IWRM into practice by social actors, the Global Water Partnership toolbox on IWRM (2003) states, "they are faced with the apparently insurmountable difficulty by bringing together a very intricate socioeconomic reality, the legacy of the past and its ingrained practices and beliefs and the apparently non-reconcilable conflicting demands." practices and beliefs and the apparently non-reconcilable conflicting demands." In view of this, the WoGA concept which has proven to create synergistic effects among social actors through extensive interactions and collaboration at the horizontal level is seen as a better option in the overall management of water resources.

Conceptual Framework

Based on the analysis of various literature reviews and their findings, it is found that management of water from a holistic point of view will require clear policy directive, sound coordination, adequate resources and supportive administrative culture within the organisations. Based on these findings, a broad conceptual framework is adopted to understand the challenges of policy, coordination, resources and administrative culture in water management faced by agencies in Bhutan as depicted in the diagram below.

Figure 1

Conceptual Framework for the Study



Clear political guidelines and leadership are the starting point for the effective functioning of an institution on a governance model by providing the actors with an understanding of their importance and roles (OECD, 2006). In order to improve the effectiveness of multiple actors in a public setting, their efforts must be synchronised through a common purpose for which political guidance and leadership are critical factors. Political guidance and leadership are not about serving merely as a referee but more about facilitating a mechanism to ensure adaptive capacity in an institution and taking accountability.

Coordination means sharing of information, resources and responsibilities among agencies especially at the horizontal level to achieve a particular outcome (States Service Commission, 2008). According to Van Meter and Van Horn (1975), the resource includes funds and other incentives to facilitate the effective implementation of policy directives. Human resources (skills, competencies), as well as financial resources, are equally important in the implementation process. Resource dependence is a powerful and direct determinant of communications, resource transactions, and consensus for effective implementation and inter-organizational relationships (Ven & Walker, 1984). These are similar to what Kernaghan (2005) termed as structural barriers that cover inter-jurisdictional tensions and political competitiveness as well as horizontal governance issues associated with the lack of dedicated funding and vertical nature of the budgetary process.

Administrative culture and support are characterised by managerial and operational factors which are critical to facilitate collaboration within and outside the agencies. Rigidity and lack of transparency in these factors do compromise effective participation of stakeholders, decision making and service delivery. Cultural barriers include an emphasis on the vertical dimension of government and support of departmental, rather than inter-departmental initiatives which work against horizontal collaboration (Flumian et al., 2007; Kernaghan, 2005). Organizational culture and behaviour can make or break joined-up working (State Services Commission, 2008).

Kernaghan (2005) highlighted four governance barriers to Integrated Service Delivery (ISD) in Service Canada, a service delivery model that was designed in response to the fragmentation and disjointed approach previously employed to deliver services to Canadian citizens. These are political, structural, operational and managerial, and cultural barriers. The continuing dominance of silo structures within and across departments and across jurisdictions are barriers highlighted as inhibiting progress with the horizontal government in Canada (Flumian et al., 2007). Political barriers are associated with little public recognition of ministries for engaging in ISD, an emphasis on the vertical dimension of government, potentially jeopardising political support for ISD initiatives. Structural barriers cover inter-jurisdictional tensions and political competitiveness as well as horizontal governance issues and issues associated with the lack of dedicated funding and the vertical nature of the budgetary process. Operational and managerial barriers incorporate lack of inter-operability (of technological, pay, reward and recognition systems that work against horizontal working); and the security of electronic transactions in particular which can seriously inhibit information sharing across departments. Finally, cultural barriers include an emphasis on

the vertical dimension of government and support of departmental, rather than inter-departmental initiatives which work against horizontal collaboration (Flumian et al., 2007; Kernaghan, 2005).

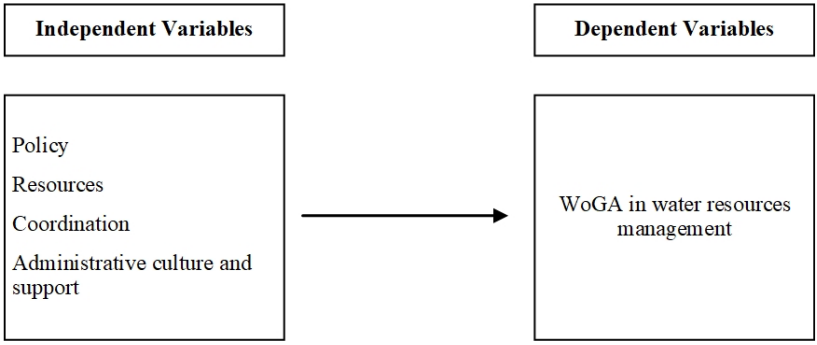
Methods

Research Design

The study adopted a quantitative research method and used the conceptual framework as discussed above. The independent and dependent variables that are used in the study are as specified in Figure 2.

Figure 2

Variables Used for the Study



Sampling Method and Sample Size

Census method was used to collect data from 12 agencies which are associated with the water management of the country. This method was adopted given the small size of the population in the agencies. The list of water agencies can be seen in the demographic information of the respondents.

Data Collection

A semi-structured questionnaire survey was developed to collect data from the water management agencies. The data collection was confined to specific divisions/sections of the agencies dealing directly with water. The questionnaire consists of seven parts which were designed mainly to find out the critical information as detailed in the research questions of this study.

Part 1: Demographic information of the respondents

Part 2: Water governance and management issues

Part 3: Policy directives and guidelines on water governance and management of the country

Part 4: Resources for water management

Part 5: Coordination related to water management

Part 6: Administration culture and support in water resource management

Part 7: General opinions and suggestions to improve water governance/management in the country

The questionnaire has both open-ended and closed-ended questions. The open-ended questions allowed the respondents to further elaborate on their responses, share their views and make suggestions, if any. A five-point Likert scale was used to understand the views of the respondents for Parts 5 and 6 of the questionnaires. A copy of the questionnaire is attached in Appendix.

The survey instrument was pilot tested with ten people working in the Royal Institute of Management (RIM) to find out whether the respondents could understand the questions well or not and to get their feedback on the overall structure and contents of the questionnaire.

Data Tabulation and Analysis

Data collected were coded, entered and analysed using Statistical Package for Social Sciences (SPSS) and Microsoft excel. Descriptive statistics was used to study the variables and thematic analysis was done for open-ended questions.

Results and Discussions

Demographic Profile

Table 1 provides the general demographic background of the respondents. More males (67.9%) participated in the research than females (32.1%). The majority of respondents were bachelor degree holders and the least with Ph.D. Professional Management Category (PMC) has the maximum number of respondents followed by the Supervisory and Support Category (SSC). Although the researchers attempted to get a proportional response from each category, there were no respondents from the Executive and Specialist Category (ESC). This was mainly because most of them were out of their stations at the time of the survey due to COVID-19 related duties while others did not respond. However, the overall response rate of the participants is 74.6%. Majority of the respondents are from the Ministry of Economic

Affairs since this ministry has the maximum number of water-related agencies.

Table 1

Demographic information of the respondents from the water related agencies

Variables	Category	(n=56) (%)
Gender	Males	38 (67.9)
	Females	18 (32.1)
Educational Qualification	XII passed	3 (5.4)
	Diploma	12 (21.4)
	Bachelors	25 (44.6)
	Post Graduate Diploma	3 (5.4)
	Masters	11 (9.6)
	PhD	1 (1.8)
Position levels	Supervisory and Support Category (SSC)	15 (26.8)
	Professional and Management Category (PMC)	40 (71.4)
	Executive and Specialist Category (ESC)	0
Agencies	Department of Park and Forest Services (MoAF)	6 (10.7)
	Department of Renewable Energy (MoEA)	12 (21.4)
	Department of Industries (MoEA)	3 (5.4)
	Department of Hydropower and Power System (MoEA)	1 (1.8)
	Department of Agriculture and Forests (MoAF)	4 (7.1)
	Department of Engineering Services (MoWHS)	8 (14.3)
	Water Resources Coordination Division (NEC)	5 (8.9)
	Infrastructure Division (Thimphu Thromde)	3 (5.4)
	Hydrology and Water Resource Service Division (NCHM)	4 (7.1)
	Cryosphere Service Division (NCHM)	6 (10.7)
	Thimphu Dzongkhag Administration	3 (5.4)
	Bhutan Electricity Authority (BEA)	1 (1.8)

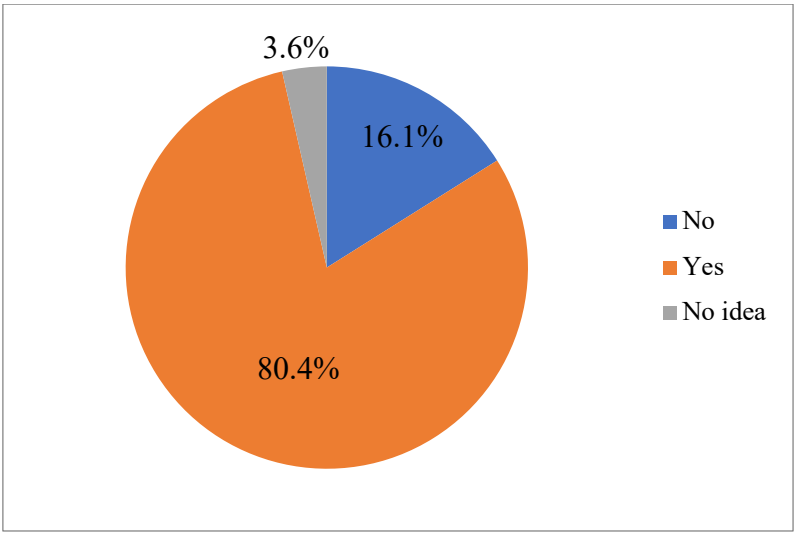
Water Governance and Management Issues

There is a general perception among the people (supported by ODE 2014-2017 findings and other subsequent reports) that there is a lack of cooperation and coordination among water management agencies in the country. Therefore, views were sought from the respondents on this issue in order to reconfirm it from the perspective of the service providers. Majority of the respondents (80.4%) believe that the existing water management in the country is fragmented due to too much emphasis on the individual sectoral mandates while (16.1%) disagreed with this view as shown in Figure 3 below.

This finding confirmed the fragmented approach in water management as it comes from the respondents of the competent water authorities.

Figure 3

Respondents' views as to whether water management in the country is fragmented or not

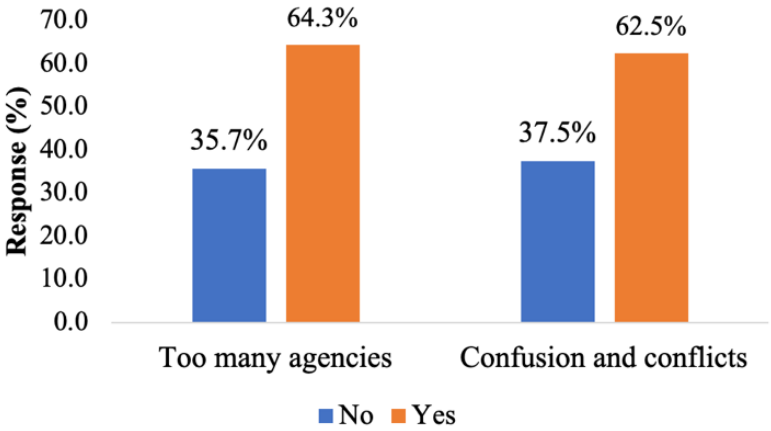


The above finding also fully corresponds to the remarks of the National Assembly's Environment and Climate Change Committee (ECCC) of Bhutan which highlighted the 'siloed mentality of the water management agencies (Rinzin, 2020).

A significant percentage of respondents (64.3%) felt that there are too many water agencies in the country. Further, in response to another related question, 62.5 percent of the respondents expressed that there are confusion and conflicts among water management agencies. These findings (as shown in Figure 4) are consistent with the research finding by Considine and Lewis (2003) wherein they highlighted that coordination issues arise due to the involvement of too many agencies.

Figure 4

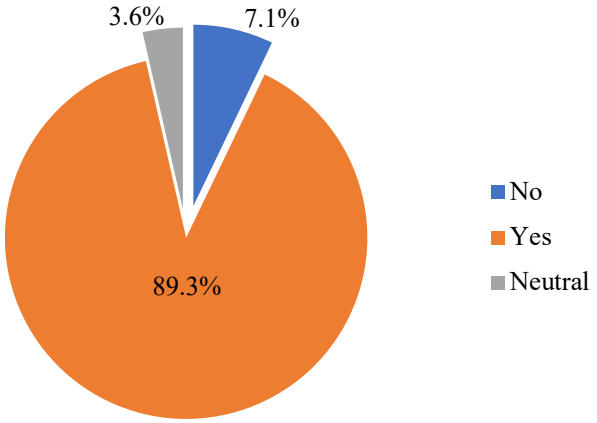
Views of Respondents on the Existence of Too Many Agencies and Confusion and Conflicts Among Water Management Agencies



The government is exploring the need to establish an independent office for effective coordination of the water flagship programme as reported in the national newspaper, *Kuensel* (Rinzin, 2020). Therefore, respondents were asked to give their views on the need to have such a centrally coordinated office to manage the water resources of the country. Majority of the respondents (89.3%) are of the view that there is the need for a nationally coordinated agency while a smaller percentage of respondents (7.1%) expressed the need to fully enforce the provisions of the existing Water Act of Bhutan 2011 rather than the need for creating a separate central agency (findings are depicted in Figure 5). According to the Water Act of Bhutan 2011, NEC is expected to play the role of the lead agency in Bhutan to facilitate the overall water management programmes of the country. However, if the new central agency is to be established, role clarity has to be drawn between NEC and the new agency.

Figure 5

Respondents' Views on the Urgency for the Establishment of a Central Water Agency



Analysing Water Management Based WoGA Perspective

This section assesses the water management in Bhutan from the perspective of WoGA considering the policy directives and guidelines, availability of resources, coordination mechanisms, and administrative support culture in the water management agencies.

Policy Directives and Guidelines

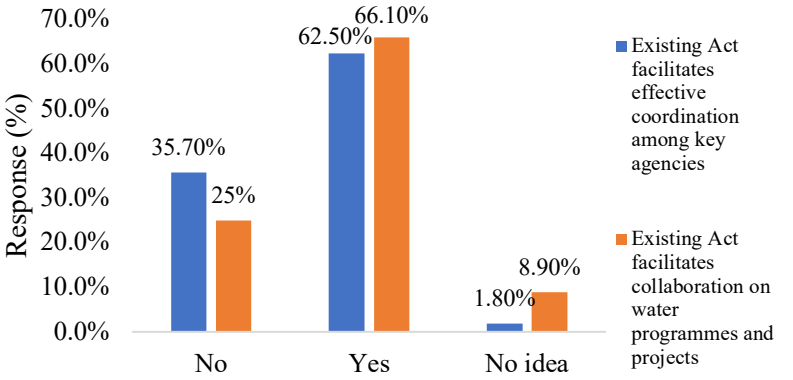
OECD (2006) highlighted in its study on the need to have clear policy guidance and leadership as the starting point for an effective WoGA. Respondents were asked whether there is a clear policy on water governance and management to which the majority of the respondents (58.9%) agreed while 39.3 percent disagreed and 1.8 percent remained neutral. Further, respondents were asked whether or not the existing Water Act/government policy has the provisions to: (i) facilitate effective coordination among water agencies, and (ii) promote joint works on water programmes and projects among relevant agencies. Findings are depicted in Figure 6.

Majority of the respondents (62.5%) agreed that the existing Water Act/government policy has the provision to facilitate coordination among water agencies. Similarly, 66.1 percent of the respondents agreed that the existing Act/government policy has the provision to undertake joint programmes and projects among agencies. However, respondents

highlighted that the actual problem lies with the implementation of the Water Act. In the absence of strict implementation of the Water Act, respondents expressed that water management agencies pursue their own priorities and interpret the Act/statute in their own favour. This indicates that there is a strong need for the strict implementation of the Water Act mainly on the need to collaborate among agencies. From this, we conclude that the existing issues in water management are not due to the absence of policy directives but due to the lack of effective implementation of the Act to collaborate.

Figure 6

Responses on the Clarity of Policy Directives to Facilitate Effective Water Governance and Management



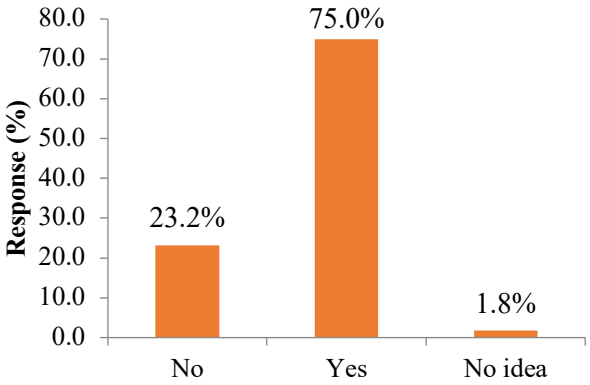
Water Flagship Programmes

The Government has prioritised water under the flagship programme in the 12th Five Year Plan (FYP). Respondents were asked to give their views as to whether the existing water issues across the agencies could be addressed through the flagship programme. Majority of the respondents (75%) expressed (findings as depicted in Figure 7) that the flagship programme could address the existing fragmented approach in water management in the country. However, many of the respondents expressed that implementation of the flagship programme will require more effective mechanisms including the adoption of appropriate performance management systems to facilitate agencies to work across the boundaries (horizontal coordination) besides changing the mindset among the agencies to work on joint programmes and projects. This could be true because, as of date, agencies (including ministries/dzongkhags) are allocated funds purely based on their organisational mandates and are evaluated only on their specific annual

targets; there are no practices related to the joint evaluation among agencies on cross-cutting programmes and projects; nor are there any policy directives on joint performance evaluation. In the same way, heads of the agencies are not assessed based on their ability to work across boundaries. This could be one of the serious bottlenecks to promote collaboration among agencies unless addressed well in the future through tweaking of existing policies and sub-systems.

Figure 7

Response on Whether Water Flagship Programme Could Address the Existing Cross-Cutting Issues in Water Management of the Country

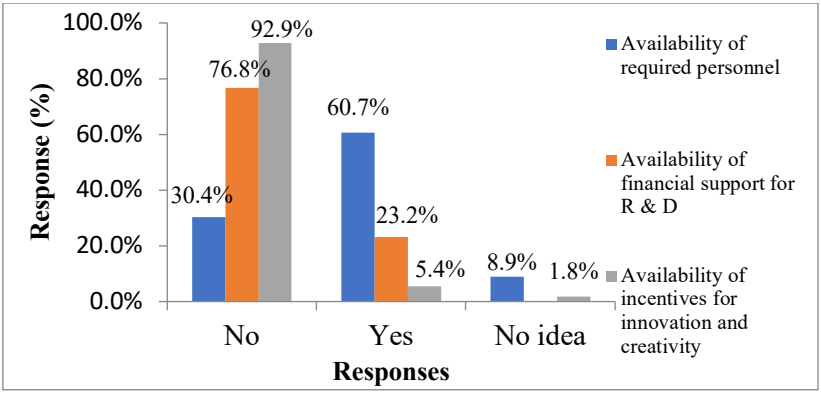


Resources Requirements

According to Van Meter and Van Horn (1975), effective implementation should be supported by adequate resources. Therefore, respondents were asked to share their views and opinions on the critical resource gaps, if any, in their respective agencies (findings are depicted in Figure 7). In terms of human resources, 60.7 percent of the respondents agreed that they have the required personnel in terms of numbers (quantity) while the remaining (30.4%) respondents indicated that there are requirements for personnel (gaps) with higher skills and competencies. In keeping with the comments of the respondents and contrasting with some of the best international best practices (eg. PUB, Singapore), it is observed that there are no mechanisms in place to ensure minimum competencies of staff and their periodic upgradation across the water management agencies in Bhutan especially in service delivery.

Figure 8

Response on the Availability of Critical Resources in Water Management Agencies



Water Act of Bhutan 2011 directs water management agencies to promote innovation and provide incentives for exemplary initiatives leading to *inter alia* sustainable use of water resources, reduction of water wastage, innovative projects, technologies and processes (section 18(b) and carry out research on water conservation, management and development (section 22). Survey findings from the study are presented in Figure 8 wherein 92.9 percent of the respondents expressed that there are no practices of providing any incentive for innovation and creativity in their respective agencies. Similarly, 76.8 percent of the respondents expressed that there is no financial support to undertake research and development (R&D). While respondents have expressed the need to develop better water technologies for the effective harnessing of water resources, however, this could be questionable without importance being given to R&D. On the whole, the above findings indicate the need to develop critical expertise in human resources across water management agencies, provide incentives for innovation and creativity and initiate research and development in water management agencies. Support to these factors will require a cross-sectoral intervention including the need for pooled funding in critical areas to shape the behaviour of water agencies towards a collaborative culture in keeping with the international best practices.

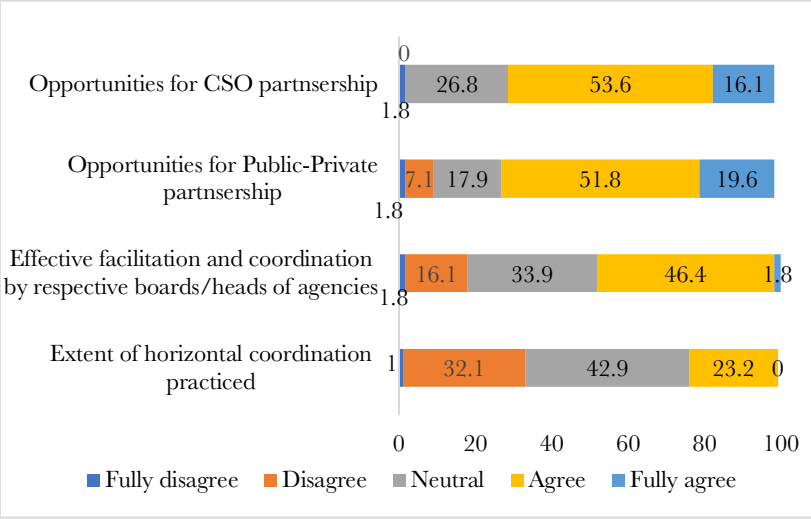
Water Management Coordination

Coordination is critical in the effective management of any organisation and particularly the horizontal coordination in WoGA. Respondents were asked to give their views in terms of Agree, Fully Agree, Neutral, Disagree and Fully Disagree to find out the extent of: (i) horizontal coordination among water

management agencies, (ii) effective facilitation and coordination by respective Boards/heads of water management agencies, (iii) opportunities for public and private partnership to collaborate on water management, and (iv) opportunities for participation of civil society organisations in water management. Findings are presented in Figure 9.

Figure 9

Responses on the Coordination Within Water Management Agencies



The findings showed that the existing practice of horizontal coordination among water management agencies is low as only 23.2 percent agreed to it while more than 32.1 percent disagreed. The fact that 42.9 percent remained neutral indicates that many are not aware of this practice or are reluctant to share their views. This could be true in the present context because they are operating only within their own agency level with a focus on vertical coordination, rather than horizontal coordination. This finding is supported by the study carried out by Flumian et al (2007) who reported that the dominance of silo structures within and across departments were the barriers for horizontal coordination. Similarly, there is no major consensus with regard to respective boards/heads of water management agencies taking significant initiative on the facilitation and coordination of programmes across agencies as only 46.4 percent of the respondents agreed to it. They may not be doing this because there is no compelling environment to do it as of now.

The Water Act 2011 has provisions for public-private partnership and participation of CSOs in water management. Majority (51.8%) of the respondents agreed that there are opportunities for collaboration between the public and private partnerships. Similarly, 53.6 percent expressed that there are opportunities for partnership between water management agencies and CSOs in specific water management areas. According to the IUCN (2018) report, CSOs can play an important role in keeping social and environmental issues on the radar of investment, particularly in South Asia (Bucknall, 2007). Further, their contribution is found useful in research and development as they collect and supply valuable data on water issues from remote areas or on a specific topic, thereby informing governments about on-the-ground realities.

Administrative Culture and Support

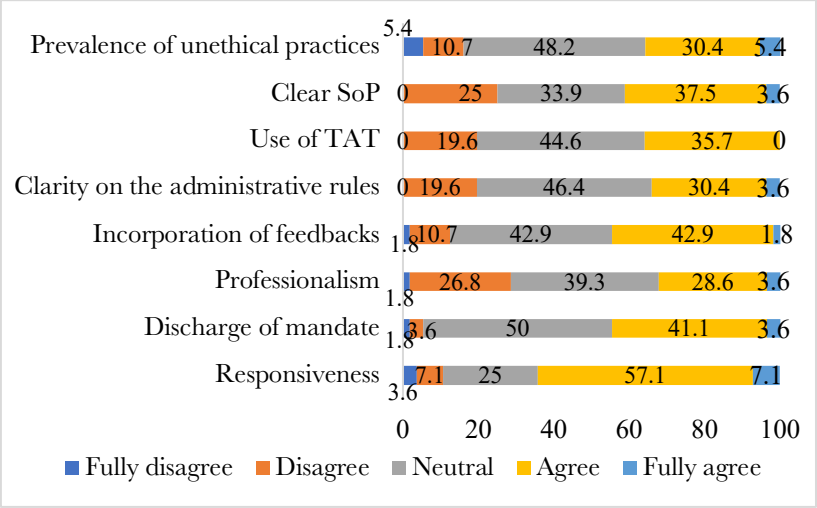
Organisational culture and behaviour can make or break joined-up working (State Services Commission, 2008). Eight indicators were selected to measure the effectiveness of administrative culture and support in water management agencies. These are: (i) responsiveness of water management agencies to the agenda of the government and society, (ii) the extent to which water agencies are discharging their mandates, (iii) professionalism in water service delivery, (iv) incorporation of feedback of clients, stakeholders and employees in the decision-making process, (v) clarity of administrative rules on the water service delivery, (vi) use and practice of turnaround time (TAT) for water service delivery, (vii) existence of clear Standard Operating Procedures (SOPs) for water services, and (viii) prevalence of unethical practices in water service delivery. Respondents were asked to give their views in terms of Agree, Fully Agree, Neutral, Disagree and Fully Disagree for each of these indicators. Findings are given in Figure 10.

In terms of responsiveness, at least 64.2 percent agree (57.1% agree + 7.1% fully agree) that the water management agencies are responsive to the agenda of the government and society. Similarly, at least 54 percent of the respondents agree (42.9% agree +1.8 fully agree) that water management agencies do incorporate feedback from clients, stakeholders and employees in the decision-making processes. However, on other indicators, there is no consensus of views on any of them. Many of the respondents remained neutral to almost all the indicators under administrative culture and support. The neutrality of respondents could be because respondents do not want to disclose the weaknesses of their agencies or because they are ignorant of these issues. Therefore, we can conclude from this section that there is significant room for improvement in the areas related to improving ethical practices, administrative rules, standard operating procedures, turnaround time, and

professionalism to enhance administrative culture and support system in the water management agencies.

Figure 10

Responses on the Indicators of Administrative Culture and Support in Water Management Agencies



Conclusion

It can be concluded that there is a fragmented approach in the existing water management of the country based on the analysis of the results. While the policy directives and guidelines are clear in Water Act of Bhutan 2011 and Water Policy 2007 for coordination and collaboration, the problem of fragmentation has emanated mainly from the lack of strict implementation of such provisions. In the absence of effective coordination mechanisms, water management agencies could be pursuing only their specific organisational mandates rather than collaborating on cross-sectoral programmes.

In terms of resources, concerns are expressed on the shortage of expertise in water management. Respondents expressed strongly the need for better technologies to harness water more efficiently which, however, greatly depends on research and development, creativity, innovation, and funding support for these activities. One of the manifestations of good water governance is the active participation of wider stakeholders in society to achieve the desired national outcomes. Therefore, there are ample opportunities for public/private/CSO partnerships in the management of

water resources of the country wherein their involvement will add value in water governance. More importantly, promoting effective collaboration among water management agencies will require a central agency to play a facilitative role supported by appropriate changes in the existing subsystems, performance management and even resource allocations.

Recommendations

In keeping with the findings and analysis of the results, the following recommendations are proposed for consideration:

Central Water Agency

It is evident from the findings that the presence of too many water management agencies without an effective coordination mechanism is resulting in duplication of efforts. Respondents support the idea of a centrally coordinated office with appropriate regulatory guidelines to address the current fragmented approach in water management and enhance service delivery. The proposed central office could operate on a similar mode as that of the Public Utilities Board (PUB) in Singapore which is a national water agency and a statutory board under the Ministry of Environment and Water Resources (MOEWR). This body could regulate the overall water management of the country, facilitate the development of minimum competencies for all the staff across water management agencies, create a platform to promote research and development, creativity, innovation, and manage general pooled financial resources that could call the tune of sectors besides ensuring for the establishment of a proper data centre and information sharing on water management of the country.

Water Technology

Water technology is one of the top most resources that need to be developed in the country as expressed by many respondents. In the current scenario, there is an urgency for such technologies to harness water efficiently and effectively, minimise pilferage and wastages, eliminate chemical and biological pollutants and intensify industrial wastes water treatment. It can be achieved through actively promoting innovation in the water sector through research and development and collaboration among universities, entrepreneurs, private sectors and civil society organisations. An appropriate platform has to be created for these actors to come together and work.

Incentives for Innovation

Rewarding innovations and increasing access to innovative solutions will help spur the development and adoption of innovative practices. Acquisition and management of talents in the agencies, creating enabling environments and forging partnerships are important factors to steer innovation. Any sector that wants to create a culture of innovation should promote R&D in the agencies. For instance, the research could seek to answer many of the emerging water management issues that the country is facing now.

Public-Private/CSO Partnership

The findings show that there is an opportunity for public/private/CSO partnership for effective water resources management. In line with the success stories of other countries, government could explore to adopt options on the public-private partnership models between Build-Own-Operate (BOO), Build-Own-Lease-Transfer (BOLT), and Design-Build-Finance-Operate (DBFO) or other successful joint ventures models. Similarly, water management agencies could collaborate with CSOs especially on research & development in line with the practices of other countries.

Limitations of the Study

This study focuses only on the views of people working in water management agencies. Thus, the results and discussions are based solely from the service providers' points of view. In addition, the respondents are only from government ministries and agencies located in Thimphu Dzongkhag. Therefore, the findings are specific to the experience of the capital city region, which could vary from other local agencies. In view of this, there is scope to undertake future research by encompassing the views of local agencies besides assessing the water management issues from the perspective of users.

Acknowledgement: The researchers are grateful to the Royal Institute of Management (RIM) for providing all the necessary support to carry out this research. Our appreciation goes to Dorji Pem, PGDPA course coordinator, Yeshey Dorji and Sangay Dorji for their assistance during data collection, and to Chandra M. Rai for the support extended during the conduct of this research. Sincere appreciation goes to all the water management agencies and the respondents for sharing their views and opinions.

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