

## China – UK, WRDMAP Integrated Water Resources Management Document Series

### Advisory Note 8.4: Use of Inter-agency Agreements for Collaborative Water Quality Management

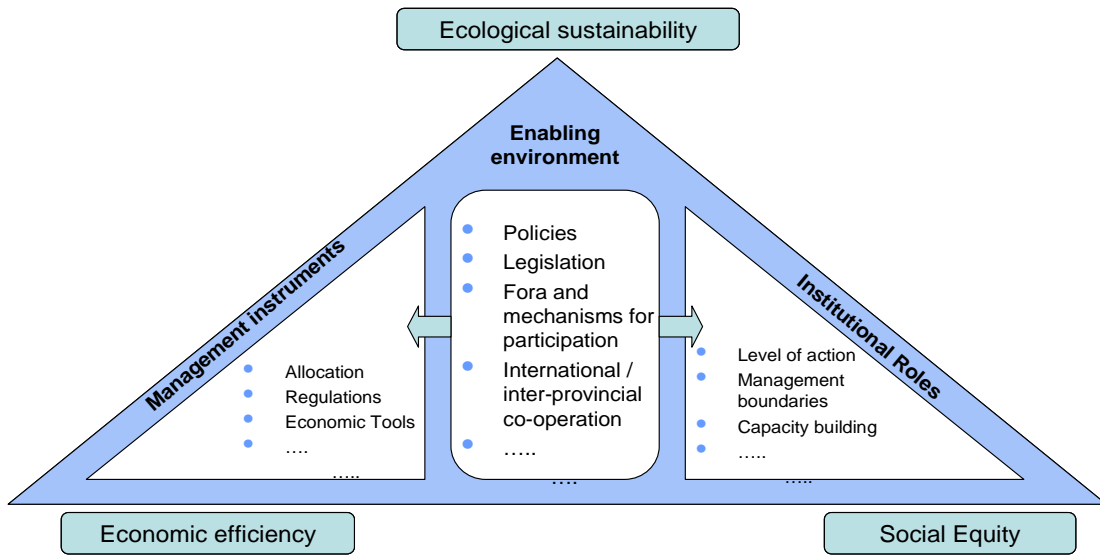
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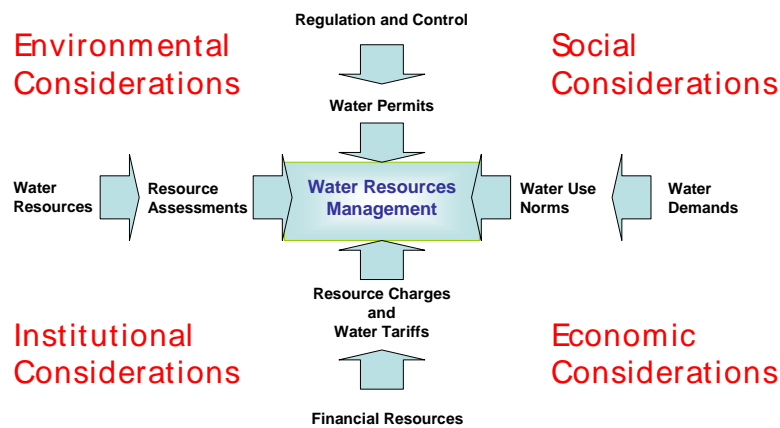
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# Integrated Water Resources Management (IWRM)

*(Basics after Global Water Partnership)*



## Driving Elements of Integrated Water Resources Management



*(Second figure after WRDMAP)*

**Summary:** This guidance note has been formulated for provincial and municipality level government agencies responsible for water management. It provides guidance on setting up inter-agency agreements - namely **Memorandum of Understanding (MoU)** and **Memorandum of Agreement (MoA)** - to facilitate cooperation and collaboration between agencies to achieve improved water management.

Recommended steps for establishing such agreements are presented, as well an example MoU for water quality management.

This document covers the following topics:

- Introduction
- Current legal framework for water quality management
- The Memorandum of Understanding – tool leading to cooperation and collaboration
- Memorandum of Agreement for provincial agencies
- Appendix:
  - Model MoU
  - Example MoU for water quality monitoring

This document is part of a series addressing aspects of integrated water resources management (IWRM) under which water quality is increasingly viewed as a critical component (see bibliography for details).

The Ministry of Water Resources have supported the Water Resources Demand Management Assistance Project (WRDMAP) to develop this series to support WRD/WAB at provincial, municipal and county levels in their efforts to achieve sustainable water use.

## 1 Introduction

This advisory note explores one of the key challenges facing water management in China. That is, how to promote cooperation and collaboration between responsible agencies at the provincial and municipality level to achieve improved water management conditions.

Many organisations are directly and indirectly involved in water management in the country as is widely known. It is commonly stated in bureaucratic terms that a number of ‘dragons’ (or government agencies) are squabbling for control of the water resources. This is in contrast to **Integrated water resources management (IWRM)** which has as one of its main concepts **stakeholder cooperation** and where possible collaboration.

Experience from the Water Resources Demand Management Assistance Project (WRDMAP) case studies has included the issue of sometimes reluctant inter-sectoral cooperation. The project has experimented with various approaches to improve this cooperation in terms of several different elements of water management. This has been in the areas of water quality management and groundwater management in particular.

This Advisory Note has been prepared with an emphasis on *water quality management*, but the same approaches can be used in groundwater management and other areas where inter-sectoral cooperation problems exist.

The document explains the legal background to water quality management in China and how barriers to inter-agency collaboration have developed. The document then goes on

to describe what inter-agency agreements are, how they can be used to improve water quality management, and finally recommends how they can be successfully instigated.

## 2 Current Legal Framework for Water Quality Management

### 2.1 Legal framework

The present law, specifically the Water Law of 2002 and Water Pollution Control Law of 2008 (and their predecessor laws of 1988 and 1996 respectively), divides the mandate for authority and responsibility over water resources as follows:

1. The Ministry of Water Resources (MWR) is the state department primarily responsible for water resources planning, allocation, and water quantity and quality protection. The latter includes water at its source and ambient conditions for surface and ground waters.
2. The Ministry of Environmental Protection (MEP, formerly the SEPA) is the state department primarily responsible for setting standards and implementation of the discharge permit system for wastewater/effluent discharges from point sources such as municipal wastewater discharges

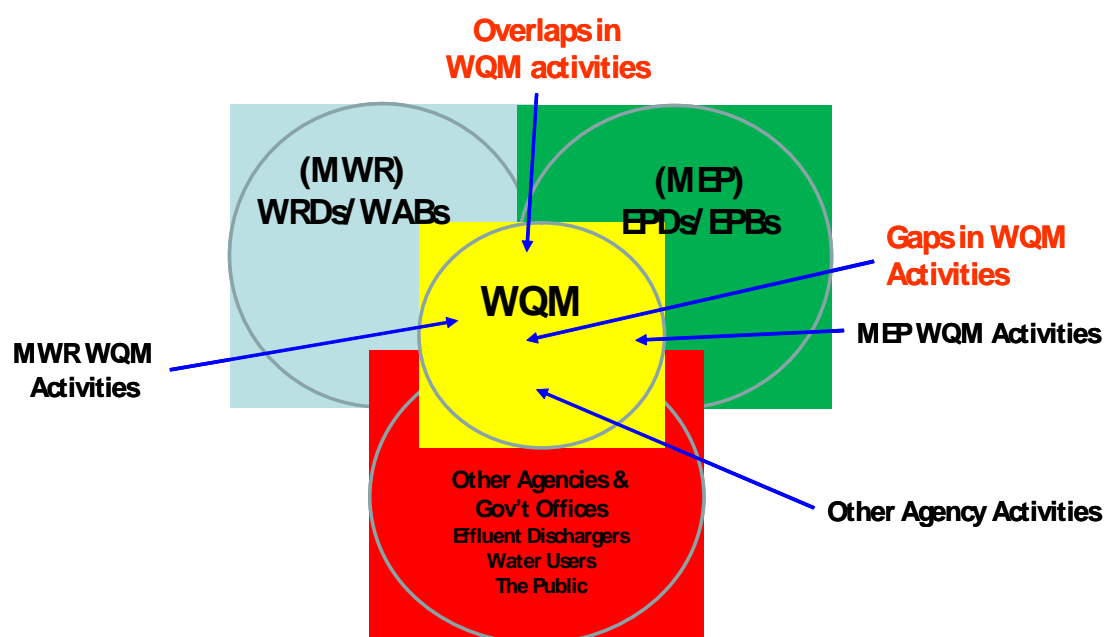
and factories and also from non-point return flows.

These mandates to MWR and MEP are applicable at all levels of agencies of the two ministries, eg provincial, municipal/prefecture and county.

There have been a number of State Council decrees and instructions, ministerial orders, regulations, and provincial legislation issued under the Water Law and Water Pollution Control Law. The most recent is the State Council issued Official Document No. 11 in July 2008. These, together with the laws themselves, have created a situation of inter-agency overlaps and gaps in water quality management and water resources protection activities. Figure 1 illustrates this “administrative dilemma”. As shown in the figure, water quality management also involves other stakeholders who may have limited roles in water quality management, or are affected by or contribute to the resulting water quality status.

Generally this is perceived to have created a situation where, in most instances, the two groups of agencies proceed with their duties and tasks relatively independent of one another. This situation works against the goals and objectives of effective water quality management and against the notion of IWRM.

Figure 1 “Administrative Dilemma” – Gaps and overlaps between responsibilities of government agencies involved in water quality management (WQM)



## 2.2 From overlaps and gaps to cooperation and collaboration

Rather than considering this area of overlapping jurisdiction as a constraint to improved water quality management, it is proposed that it be viewed in the positive light of a challenge to address an area of common interest to achieve the expected results of better water quality conditions.

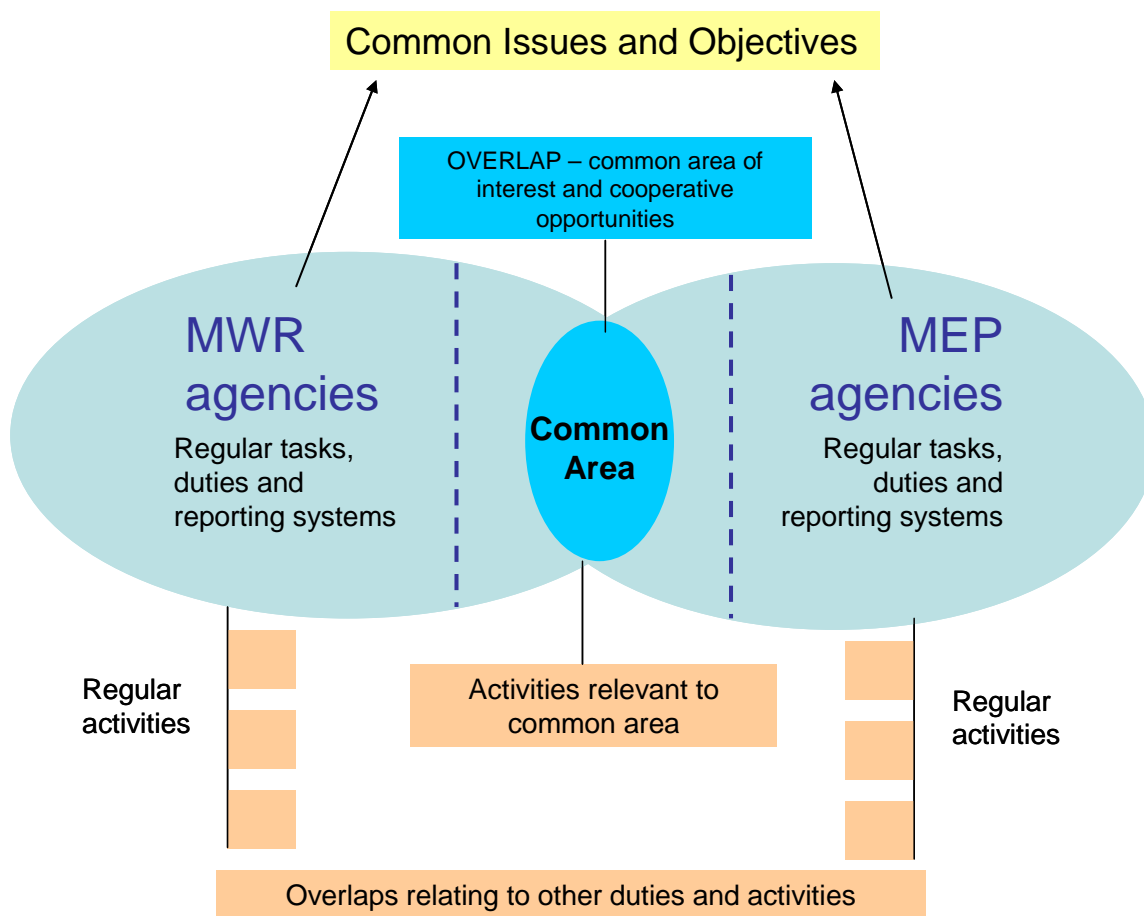
This involves engaging in cooperation and collaboration of management of water resources quality by results, not by mandated objectives and tasks delegated to the agencies.

Figure 2 illustrates the relationship from this perspective.

Indeed, the importance of inter-agency collaboration for water quality management has been recognised by MWR and MEP and many of their provincial level departments.

In response to deteriorating water quality conditions in China, in July 2008 the State Council issued Official Document No. 11 (SC OD No. 11) which set out the “Three Establishments” (responsibilities, organizational structure, and staffing) for a number of ministries, but in particular, those of MWR and MEP. This stressed the need for the two ministries and their provincial level departments and bureaus to “*further strengthen coordination and cooperation, set up an inter-ministry consultation mechanism, circulate information concerning water resource protection and water pollution prevention and control on a regular basis and solve relevant major issues through consultation*”. Both the Water Law and the Water Pollution Control Law themselves also contain references to the need for cooperation between the Water Resources agencies and the Environmental Protection agencies (as well as other government departments).

Figure 2 Common area of interest between agencies of MWR and agencies of MEP



However, when it comes to how such coordination and cooperation should be carried out, both the Laws and SC OD No. 11 could be considered to be rather ambiguous. Table 1 sets out the key aspects of water quality management and where it is perceived that WABs and EPBs have responsibilities, ie where collaboration would be expected.

There is thus a need to develop effective and practical ways to facilitate the cooperation and coordination between the two agencies. This document responds to this need by suggesting that an already applied tool for inter-agency cooperation be applied and refined, that is, the Memorandum of Agreement (MoA) and Memorandum of Understanding (MoU).

MoAs and MoUs are employed in many countries to improve water quality management conditions and in a host of other areas where two or more agencies have overlapping areas of jurisdiction, administration and operation. In the U.S.A., for example, this document is called an Inter-agency Agreement (IAA), but it functions in a very similar manner to the MoU applied in Liaoning Province for water quality management (see Box 1).

The next section addresses the nature of the MoU and provides a model example from the list of potential technical areas where MoUs might be applied.

Table 1 Generic water quality management measures in China

No.	WQM Aspect	Primary agency			Collaboration based on input from aspect No.	Use of GIS
		WAB	EPB	Other		
<b>Water quality conditions</b>						
1	WQ monitoring - surface water	✓	✓	✓		Priority
2	WQ monitoring - groundwater	✓	✓	✓		Priority
3	WQ monitoring - pollution sources, premises		✓		18	Potential
4	WQ testing laboratories	✓	✓	✓		Priority
5	Sewerage system and WWTP monitoring	✓	✓	✓	10-15, 17	Priority
<b>Water quality planning issues</b>						
6	Comprehensive water resource plans	✓			7, 8, 11, 13, 16	Potential
7	Reservoir release operations and management	✓			6, 11-13, 16	
8	Drought management	Mayor+✓			1-5	Potential
9	WQ implications of urban development, forestry and agriculture plans	✓	✓	✓	1- 5, 10	Potential
10	Regional pollution control plans		✓		1-5, 11-17	Potential
11	Ecological flow requirements	✓?	?		1-7	Potential
12	Total Load assessment	✓	?		1, 3, 6, 7, 13	
13	WQ modelling	✓			1, 3, 6, 7	Potential
14	WQ functional zoning	✓			1-5, 12, 13	Priority
15	Environmental functional zoning		✓		1, 3, 12, 13	Priority
16	Environmental impact assessment		✓	✓	1-5	
<b>Water quality control strategies and levers</b>						
17	Abstraction permit management	✓			1, 2, 6-8, 11	Priority
18	Discharge permit management		✓		1,2,5,6,10-17	Priority
19	Effluent discharge charges and penalties for permit non-compliance		✓		18	
20	Industrial on-site treatment, recycling, retrofitting		✓	✓	1,2,5,6,10-17	
21	WWTP operational management – planning, construction and controls	Mayor+✓	?	✓	1,2,5,6,10-17	
<b>Reporting of water quality conditions</b>						
22	Water reporting and bulletins – water resources	✓			All	Priority
23	Water reporting and bulletins – WQ and environmental conditions		✓		All	Priority

**Box 1 Example - Application of a MoU for water quality management in Liaoning Province**

Beginning in mid-2005, the Department of Water Resources and Department of Environmental Protection in Liaoning Province, under the influence of WRDMAP project (DFID 2005-2010), entered into a written agreement to pursue various means of cooperation and coordination of their activities to improve water quality conditions.

In December 2005 the first Memorandum of Understanding (MoU) under the agreement was entered into between the Water Affairs Bureau (WAB) and the Environmental Protection Bureau (EPB) of Chaoyang. The MoU was to share data in an effort to develop coordinated and integrated water abstraction and discharge permit systems.

This MoU was subsequently supplemented by a second MoU in October 2006 to strengthen and expand the cooperation in sharing data after extensive negotiations. This second MoU included an Appendix providing details of sharing permit data, water use and discharge data, and functional zone monitoring data as well as water quality modelling activities.

It is believed that MoA and MoUs might go a long way to responding to State Council Document No. 11.

### 3 Memorandum of Understanding – Tool leading to cooperation and collaboration

#### 3.1 What are MoUs?

MoUs have been defined as “a document describing a bilateral or multilateral agreement between parties. It expresses a convergence of will between the parties, indicating an intended common line of action. It most often is used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement.”

*“A Memorandum of Understanding or MoU is put in place to establish a clear understanding of how the deal will practically function and each party’s role and compensation (cost sharing). One advantage of MoUs over more formal instruments is ... they can be put into effect in most countries without requiring parliamentary approval.”*

It is common practice to have senior officials/leaders of an agency or enterprise enter into a Memorandum of Agreement (MoA) that sets out in general the areas the parties would cooperate and collaborate. The details and specifics are then left up to the particular departments involved at various levels of the organization.

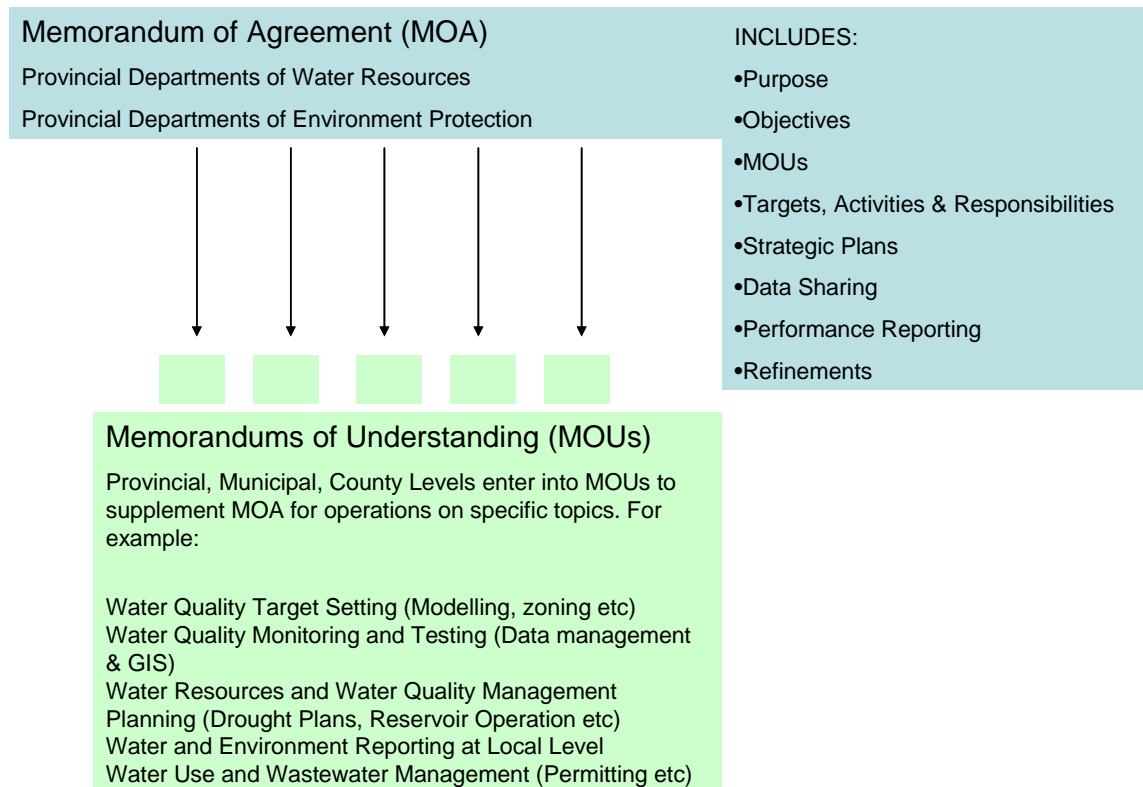
Figure 3 illustrates the relationship between a MoA and MoUs and shows typical topics in water quality management that MoUs could be applied to.

Section 3.5 and the Appendices at the end of the document provide a model example from the list of potential technical areas where MoUs might be

applied in the field of water quality management. It should be noted that this model example can be readily applied to other water resource collaboration issues.

While MWR and MEP (and other agencies) are building up experience in using MoAs and MoUs it would be beneficial for MWR to hold copies of such agreements to help in establishing best practice for dissemination.

Figure 3 MoAs and MoUs



### 3.2 What types of MoU are used, for what purpose and by whom?

MoUs can be short or long, formal or informal, general or detailed, but they are almost always written and signed by responsible parties with authority to carry out the commitments set out in the MoU. In reality, you can make the MoU as simple or complicated as is necessary for the comfort and mutual consensus of those involved. For example, the MoU could be a simple statement e-mailed to the other party with a response saying they agree.

Other parties require every detail and possibility ironed out ahead of time.

The following section includes a list of topics which might be included in a MoU. It is common to place the objectives and expected outcomes in the MoU body and attach appendices to it by reference that contain specific details of a technical or operational nature for cooperation and collaboration. An appendix can generally be modified more easily than the MoU document.

### 3.3 Are MoUs contracts?

No, MoUs are generally not contracts.

Unlike a contract, an MoU can rarely be enforced by a court of law for breach or non-compliance. MoUs are generally considered an expression of voluntary compliance in the area of cooperation, like a good-faith promise.

There may be many reasons why one or other party to an MoU cannot comply to the specifics of the MoU, but rarely can there be a legal process to enforce the MoU. An inter-agency MoU may encourage compliance to the best abilities of the parties as part of performance evaluation in achieving the MoU objectives based upon the results that are expected. In some cases, depending on the exact wording, MoUs can have the binding power of a contract; for instance, on sharing or reimbursing costs.

### 3.4 Do MoUs have a specific format, length, etc.?

MoUs can be very short, a paragraph, or very long, with many pages and attachments.

However, there are certain key features that most successful MoUs contain and that are recommended whenever the MoU is used as an interagency agreement (between two or more governmental agencies) to cooperate for improving water resources management and protection. These are:

- The date of the MoU
- Describing the situation of the parties involved and how they relate to each other.
- The objectives and expected results coming from the cooperation of the parties, which

may provide a stated set of goals and interim target dates to measure accomplishments under the MoU.

- What services each party contributes to the deal before, during and after the MoU.
- The names and contact information of each party.
- Any probationary or trial period.
- Any set dates to review activity, performance, or satisfaction and reporting requirements.
- What parts of this deal are open to change or negotiation and how.
- What aspects of the deal should require formal notification and how.
- How differences or disputes will be settled.
- When the deal starts (on a certain date, during a limited event, as soon as the parties can bring together the necessary inputs and assurances of compliance).
- How long it lasts (for a certain period, indefinite until someone ends, at the end of an event).
- How the deal is terminated (by one or both parties, under what circumstances, how the ending is to be carried out.)
- What happens at the end of, or after the deal.
- Any restrictions to either party
- Any disclaimer statements, for example, if data is not available, if a monitoring station fails, etc.
- Any privacy statements (such as sharing data with the parties to the MoU but not to be made available to other by any party)
- A place for all parties to sign the agreement.

### 3.5 Framing the MoU and steps to follow

The following sets out objectives and goals for an example MoU between a municipal level Water Affairs Bureau (WAB) and Environment Protection Bureau (EPB).

#### **Objective (example):**

To develop a Memorandum of Understanding (MoU) between WAB and EPB by key leaders of both organizations.

#### **Assumption (example):**

Provincial level Memorandum of Agreement (MoA) between provincial MWR and EPB is in place for basic parameters, data sharing and practice of working together between municipal WABs and EPBs that is the basis for the first MoU.

#### **Goals, targets, outcomes and expected results (example):**

The goal is for improved water quality management at Municipal level through collaboration and cooperation of WAB and EPB. The targets to be set are annual levels of improvement in the ambient water quality conditions of rivers and lakes and at wastewater discharge points as monitored in the municipality. The outcome and expected results are to meet or exceed annual water quality improvement targets established to meet the long-term goals.

#### **Potential MoU topics: one or more of the following technical aspects in the MoU:**

1. Water quality monitoring and testing (data, management, GIS, etc.)
2. Water resources and water quality management planning (droughts, reservoir operations, etc.)
3. Water quality target setting (zoning, total load assessment, assimilative capacity studies, modelling, etc.)
4. Water use and wastewater management control mechanisms (permitting, etc.)
5. Water and environment reporting, local level

**Six steps** are suggested to facilitate the discussions, negotiations and framing of a draft MoU.

#### **Step 1: Introduction meeting with high level WAB and EPB officials**

- Describe existing systems for [one or more of five technical aspects above.]
- Find areas of common interest between WAB and EPB.
- Identify need for cooperation and collaboration
  - If Yes, agree to form WAB-EPB Task Force on Cooperation, Coordination or Collaboration. Function of Task Force is to prepare MoU and afterwards is dissolved.
  - Lay out basic parts of a Terms of Reference (ToR) for this Task Force

- Discuss need for and membership of permanent Steering Committee

### ***Step 2: WAB-EPB functional working level meeting***

- Describe results of High Level Meeting 1.
- Select WAB-EPB Task Force Members.
- Agree and refine the Task Force ToR on collaboration and MoU.
- Assign a legal MoU framework team.
- Clearly define the 'purpose' and 'scope' of the MoU in general and in detail.
- Provide summary of actions and decisions to Steering Committee.

### ***Step 3: Task force completes ToR and MoU Draft***

- Complete technical contents of MoU and prepare final report.
- Complete MoU framework on legal structure.
- Clearly finalise the general and detailed responsibilities that relate.
- Merge technical details into framework of MoU and present to High Level Management.

- Describe necessary meetings and annual review processes.
- Set up monitoring and evaluation reporting of progress in meeting the defined key performance indicators.
- Provide summary of actions and decisions to Steering Committee.

### ***Step 4: MoU finalization***

- Negotiation and settling of final MOU framework and contents.
- Schedule of implementation.
- Financial implications and arrangements.
- Signing (WAB, EPB, plus potentially municipal government official)
- Decision on long-term Steering Committee need and membership.
- Set up temporary or permanent WAB-EPB Working Group, depending on MoU.

### ***Step 5: Regular meetings***

Meetings will be held according to following suggested chart, subject to local conditions:

Table 2 Suggested MoU meetings

Frequency	Steering Group	High level Management	Working Group	Other stakeholders**
Every Month				
Every quarter			As required	
Annually	As required*	✓	✓	As required
Irregular	As required	As required	Y	As required

\*In formulating the MoU, it is useful to identify who other stakeholders are and their interest in the MoU goals and expected results. These interests should be taken into account, and subsequent meetings might schedule involvement of the relative other stakeholders. MoU/MoA implementation reporting will be submitted to Steering Group.

\*\* The data sharing practices could include a list of possible organizations.

### Step 6: Annual reviews and reports

The MoU parties will carry out numerous informal and formal meetings and discussion during the course of implementation, perhaps to include workshops and seminars for the benefit of enlightening staff, getting other stakeholders involved to express their views and concerns, etc., during which a record of the joint meetings should be kept by both parties. In addition to the technical monitoring conducted for water quality management, the parties need to establish a uniform and systematic monitoring and reporting of the progress and performance leading toward goal and target achievement based on actual results. These MoU monitoring reports may be monthly or quarterly as the situation requires.

A model MoU between two parties is presented at the end of this document followed by an example of applying an MoU to achieve coordinated water quality monitoring.

- Annually the parties should convene a meeting to, review progress and performance for the preceding year to get an accurate assessment of the status, and make necessary refinements to the MoU to meet the following year targets and keep the efforts on track to meet the stated goals.
- Schedule meetings prior to annual budget process of WAB and EPB.

## 4 MoAs for Provincial Agencies

A Memorandum of Agreement (MoA) is a document setting out the terms on which the parties agree to work on a particular project or meet an agreed objective. It can be used between agencies, the public and the federal or state governments, communities, and individuals. The purpose of a MoA is to have a written understanding of the agreement between parties. A MoA lays out the ground rules of a positive collaboration effort.

A MoA can also be used as a document outlining the terms on which the parties agree (in principle) to form a partnership in respect of certain identified projects, or to form a partnership for general purposes. The agreed responsibilities of the partners will be listed and the benefits of each party will be listed. As a part of the agreement there is usually a list of binding terms that makes the partnership a cohesive unit and often there is an obligation of funds attached to certain terms in the agreement.

A MoA can be used by provincial level departments to aid collaborative water quality management. Senior officials from different departments involved in water quality management can enter into a MoA that sets out in general the areas where the parties would cooperate and collaborate. The specifics of agreement for particular technical areas are then detailed in MoUs.

The following steps provide a framework for establishing a MoA for collaborative water quality management between provincial departments, namely Provincial Water Resources Departments (PWRD) and Provincial Environmental Protection Departments (PEPD).

### Step 1

Meeting of senior officials of provincial government and the two departments (PWRD and PEPD) to set out the:

- purpose, objectives and expected results of their cooperation;
- scope, functions and activities of cooperation and those of related significance of each of the two agencies;
- preparation of joint one to five year work plan and strategy, including schedules and timeframes, with annual review and refinement;
- monitoring and performance of activities and level of achievement of results; and,
- reporting and refinement of joint strategy and work plan on WQM.

### Step 2

Prepare draft MoA to cover the following topics after discussions, consultations and negotiations leading to consensus:

*Purpose* – MoA sets general policy area of collaborative agreement for water quality management. The MoA also:

- Includes scope and details for operational implementation through supporting MoUs where necessary by provincial, municipal and county offices of DWR and DEP.
- Identifies collective activities and who is responsible and accountable for actions as agreed.
- Provides for consultation and negotiation to reach consensus on encountered difficulties.
- Calls for uniform and unified efforts to increase effectiveness and reduction of costs particularly in

timely gathering, sharing and analysis of data and information.

- Calls for monitoring and reporting based on performance as related to results.
- Calls for regular and special meetings to insure communication and enhance cooperation etc.

*Objectives* – The intent of promoting and ensuring cooperation between water resources and environment departments and bureaus is to acknowledge the interdependent nature of water quality management with the expectation that the cooperation efforts will enable provincial water quality targets to be met.

Specifically, the objective is to measure performance **based on resulting improvements to water quality** and not in carrying out duties and tasks.

*MoUs* – The MoA is a higher level mutual agreement supplemented by MoUs for a number of specific topics to reflect varying conditions in local conditions and agency capabilities. MoUs can be entered into by provincial, municipal and county water and environment agencies, as well as other stakeholders to improve expected results.

*Targets* – Setting annual outcomes or result levels for improved water quality conditions at basin, provincial, and lower administrative levels.

*Strategic Plans* – Each agency prepares annual and short/long term strategic plans of action for water quality management. Each participating agency should keep the others fully informed of all such plans, or changes to plans, so that effective coordination can be maintained.

*Activities & Responsibilities* – Each participating agency will identify their independent and joint activities and responsibilities as mutually agreed to, with the aim of improving efficiency and effectiveness, clarifying ambiguities, and minimizing redundancies and conflicts. Collaboration is promoted to leverage inputs for optimum outputs.

*Data Sharing* – Sharing data and information is one of the most important topics of agreement; **without sharing adequate data and information in a timely manner, analysis and decision-making will be impaired, performance hampered and targets missed.** Fundamental water quantity and quality data, including data on water abstraction and effluent discharge permit systems, should be standardized for systematic collection, storage and access and combined into integrated databases. Access should be gained to information collected by other government and non-government stakeholders, and this information should be added to the database system.

*Agency Coordinators and Coordination Meetings* - Provincial DWR and EPD and municipal and county level WRBs and EPBs are to designate WQM Agency Coordinators who will serve as the contact person for implementation of this MoA and MoUs entered into under this MoA.

These Coordinators shall be responsible for meeting schedules, notices and agendas. Coordinators and relevant staff at the respective levels shall meet quarterly to review conditions, progress and adjustments as reported their own agency level; urgent or special formal or informal meetings can be called as needed.

It is suggested that the meeting Chairperson rotates biannually with the first two quarter meetings of every year chaired by DWR and second two quarter meetings chaired by EPD. The meetings scheduled for the three levels (provincial, municipal, county) shall be set annually. This will insure county levels meet prior to and provide a summary report to municipal level meetings, and that municipality levels meet prior to and provide a summary report to provincial level meetings.

*Performance: results based management and reporting* - Systematic monitoring and reporting of activities and resulting impacts under the strategic plan (particularly through cooperative management efforts) should take place. This performance-based management will keep the agencies and their personnel focused upon improving and maintaining acceptable water quality conditions.

*Refinements* - The plans, activities and actions providing the framework of cooperation for the two agencies and other participating stakeholders should be periodically and systematically reviewed and refined to improve efforts, performance and results.

### **Step 3**

Finalize draft MoA, prepare start-up implementation schedule and agendas

for the levels of each agency to review and determine feasibility. The same format and process suggested for the MoU can be applied to preparing a MoA.

### **Step 4**

Provincial, municipal and county coordinators organize their level start-up meeting to review the MoA and decide the number of and priority of MoUs necessary and to be worked on. Results of the municipal and county levels meetings should be submitted to provincial coordinators, discussed and a provincial plan of action prepared for proper support to municipal and county level. Initial high priority MoUs should be prepared within the six months and cooperative measures undertaken.

### **Step 5**

It is important to have regular scheduled meetings, plans of action and cooperative efforts by the two water quality management bodies at provincial, municipal and county levels. This allows the setting of realistic targets, functional cooperation and improvements in water quality conditions.

## **Appendices**

**Appendix A – Memorandum of Understanding (MoU) *Model***

**Appendix B – MoU Section II Purpose and Scope: *Water quality monitoring***

**Appendix C – MoU Appendix: *Setting out technical details of the agreement***

## Appendix A –

### Memorandum of Understanding (MoU) Model

**Memorandum of Understanding  
Between  
("A" Organization) And ("B" Organization)  
For Application To  
(specific programs, activities, objectives through cooperation and collaboration)**

This **Memorandum of Understanding (MoU)** establishes a *working cooperative and collaborative relationship* between "A" and "B" hereafter referred to as the Parties.

#### I. Areas of Responsibility of the Parties

Brief description of "A" areas of responsibility (including area of common or shared interest)

Brief description of "B" areas of responsibility (including area of common or shared interest)

Together the Parties enter into this Memorandum of Understanding to mutually promote (*describe objectives, goals and expected results that this working relationship will achieve*). Accordingly, "A" and "B" operating under this MoU agree as follows:

#### II. PURPOSE AND SCOPE

Through the cooperation and collaboration by the parties, (*describe the intended results or effects that the organizations hope to achieve, and the area(s) that the specific activities will cover*).

1. Why are the parties forming this relationship?
2. What benefits are expected that are not presently being realized?
3. Who are the targeted stakeholders and how do they benefit?

*Include issues of funding, cost sharing or reimbursements as necessary. For example, each organization of this MoU is responsible for its own expenses related to carrying out the terms of this MoU. Except as may be specifically agreed to in the MoU, annex/appendix or during implementation, there will not be an exchange of funds between the parties for tasks associated with implementation of this MoU. However, it is anticipated that by working together, certain cost may be reduced for one or both parties, in which case, an effort will be made to share the cost reductions equally or commensurate with the benefits to the parties. The parties may state that specific technical, operational or coordination details and schedules are set out in appendices/annexes.*

#### III. RESPONSIBILITIES

Each party will appoint a person (or unit) to serve as the official contact and coordinate the activities of each organization in carrying out this MoU. The initial appointees of each organization are:

*List contact persons/unit with address and telephone information*

The parties agree to the following tasks for this MoU:

“A” will:

- *list tasks of “A” as bullet points*

*Partnering organization will:*

- *list tasks of “B” as bullet points*

“A” and “B” will:

- *list shared tasks, etc. as bullet points*

#### **IV. TERMS OF Memorandum of Understanding**

The term of this MoU is for a period of *(insert length of MoU, usually 1-3 years, or may be perpetual until it is determined the issue addressed can no longer be benefited from the relationship, or it may be the term of the MoA)* from the effective date of this agreement and *(if for a fixed term)* may be extended upon written mutual agreement. It shall be reviewed at least *(insert how often, usually annually)* to ensure that it is fulfilling its purpose and to make any necessary revisions and refinements.

Each party will (or the parties will jointly) prepare annual reports to their respective superiors describing the areas of cooperation and collaboration, achievement of targets and efforts towards goal or objectives based upon performance of the parties and resulting impacts.

Either organization may terminate this MoU upon thirty (30) days written notice to the other party and to their immediately higher supervising office.

#### **Authorization**

The signing of this MoU is not a formal undertaking. It implies that the signatories and their agencies will strive to reach, to the best of their ability, the objectives and conditions of cooperation and collaboration stated in the MoU.

On behalf of the parties signing below:

“A” Organization:

*Date*  
*Name*  
*Title*  
*Organization*

“B” Organization:

*Date*  
*Name*  
*Title*  
*Organization*

## Appendix B –

### MoU Section II Purpose and Scope: *Water quality monitoring example*

#### Section II Purpose and Scope

The purpose of this MoU is for the parties to improve and collaborate on the monitoring of water quality and quantity for ambient conditions and discharge points in the Chaoyang District. Specifically, the parties will jointly undertake or cooperate on the following aspects and tasks and may form a task force to carry out certain activities:

- 1) Identify the different monitoring programmes and datasets in both organizations.
- 2) The task force will define the area/scope of cooperation/collaboration and prepare a draft strategic plan for the first year of operation. It can include:
  - Data sharing -Dataset exchange
  - Work sharing -Jointly working together in an agreed scope, and then exchange the data in agreed timetable
- 3) By consideration of the fact that WAB monitoring system is different from EPB in terms of location, frequency, parameters etc. it is necessary to find out common elements to initially start the joint working.
- 4) Where necessary relevant optimization practices may be needed for the monitoring system design. Then both parties could have better confidence with more same aspects. After optimization, both parties may have same locations, similar frequency, data handling details, etc.
- 5) Define the area of cooperate/collaborate - area of data sharing and/or area of jointly monitoring work. Discuss and agree on targeted monitoring contents (see Appendix 1). It may also need to find the ways to address those parameters which is only interested by one organization. (For instance, same time to dedicatedly delivery some of samplers to EPB for those parameters only EPB analysis.)
- 6) Sharing datasets (either exchange or jointly work) for the specific Water Quality Management purposes:
  - Routine reporting
  - Permitting
  - Function Zoning define- justification, supervision or modification
  - Modelling
  - Project EIAs
  - R & D
  - Trans-boundary supervision

- 7) Discuss and agree on the monitoring methodology, such as:
  - Sampler type (continuous, spot-sampling-lab-analysis, site/probe measurements, etc.)
  - Sampling methodology, condition of samplers' bottling, preservation, storage, transportation, etc.
  - Chemical analysis methodology, including pre-treatment
  - Data handling procedures, statistics tool, significant test, etc.
  - Data reporting format
- 8) Indication of level of national laboratory certification, and staff qualification (if necessary).
- 9) Agreed on dataset or monitoring result exchange/delivery timeframe.
- 10) Agreed on the necessity of inter-laboratory testing, where necessary (for instance using check samples, define the level of systematic errors and uncertainty).
- 11) Agree on any logistic support each other, where necessary.
- 12) Other relevant details: Responsible person and connection person, contact details, topics for regular meetings, etc.

## Appendix C – MoU Appendix: Setting out technical details of the agreement

### Appendix 1: Detailed technical aspect for surface water monitoring:

Nr	Contents	Note
1	<ul style="list-style-type: none"> <li>• Sampling locations</li> </ul>	<ul style="list-style-type: none"> <li>-clearly define the monitoring locations</li> <li>-With indicative map</li> <li>-Roles of representatives</li> </ul>
2	<ul style="list-style-type: none"> <li>• Frequency and timing</li> </ul>	<ul style="list-style-type: none"> <li>-including sample types (spot, or combined, etc)</li> </ul>
3	<ul style="list-style-type: none"> <li>• Parameters (for surface water)</li> </ul>	<ul style="list-style-type: none"> <li>-Physical</li> <li>-Chemical</li> <li>-Hydraulic/Flow data</li> <li>-Biological parameters</li> <li>-Ecological</li> </ul>
	<ul style="list-style-type: none"> <li>• Parameters (for groundwater)</li> </ul>	<ul style="list-style-type: none"> <li>-Physical</li> <li>-Chemical</li> <li>-Hydraulic/Flow data</li> <li>-Biological parameters</li> <li>-water table depth</li> </ul>
4	<ul style="list-style-type: none"> <li>• Wet chemical analysis methodology</li> </ul>	<ul style="list-style-type: none"> <li>-Standard material used</li> <li>-standard method</li> <li>-modified method</li> <li>-equivalent method</li> <li>-sample pre-treatment</li> <li>-use of sampler(s) and</li> </ul>
5	<ul style="list-style-type: none"> <li>• Sampling</li> </ul>	<ul style="list-style-type: none"> <li>-sampling method</li> <li>-sampler(s)</li> <li>-sample types (spot, combine, etc.)</li> <li>-sampler bottling, labelling, storage, preservation, transportation, etc.</li> </ul>
6	<ul style="list-style-type: none"> <li>• Quality control and Quality assurance (QA/AC)</li> </ul>	<ul style="list-style-type: none"> <li>-Level of uncertainty;</li> <li>-Standard Reference Material</li> <li>-Certain percentage of duplicated samples, blanked samples, spiked samples, etc.;</li> <li>-Using quality control chart, etc.</li> </ul>
7	<ul style="list-style-type: none"> <li>• Data treatment method</li> </ul>	<ul style="list-style-type: none"> <li>-Statistic approaches</li> <li>-Figures and tables</li> <li>-decimals</li> <li>-data format</li> </ul>
8	<ul style="list-style-type: none"> <li>• Inter-laboratory testing</li> </ul>	<ul style="list-style-type: none"> <li>-To be decided;</li> <li>-It could be important when certain level of acceptable data uncertainty was found;</li> <li>-Expectation of systematic error and random error.</li> </ul>
9	<ul style="list-style-type: none"> <li>• Reporting format</li> </ul>	<ul style="list-style-type: none"> <li>-Data interpretation and compare with the results;</li> <li>-warning levels</li> </ul>
10	<ul style="list-style-type: none"> <li>• Monitoring System optimization</li> </ul>	<ul style="list-style-type: none"> <li>-Where necessary – for water quality management (WQM) needs;</li> <li>-Review of monitoring results: are results representative and reliable?</li> <li>-Feedback from data application (ie from discharge permitting, WQ modelling, GIS analysis, etc)</li> </ul>

## Document Reference Sheet

### Glossary:

EPD/EPB	Environmental Protection Department/Bureau
IWRM	Integrated water resources management
MEP	Ministry of Environmental Protection (formally SEPA)
MoA	Memorandum of Agreement - a document setting out the terms on which the parties agree to work on a particular project or meet an agreed objective. It can be used between agencies, the public and the federal or state governments, communities, and individuals.
MoU	Memorandum of Understanding – a document setting out, in more detail than included in a MoA, practical operations on specific topics. MoUs are generally considered an expression of voluntary compliance in the area of cooperation.
MWR	Ministry of Water Resources
SC OD No 11	State Council Official Document No 11
ToR	Terms of reference
WAB/WRD	Water Affairs Bureau/Water Resources Department
WQM	Water quality management

### Bibliography:

SC OD No.11 Water Law and Water Pollution Control Law, July 2008.

### Related materials from the MWR IWRM Document Series:

Advisory Note 2.1	Developing an IWRM Plan
Thematic Paper 8.4	Inter-agency Collaboration for Improved Water Quality Management

### Where to find more information on IWRM – recommended websites:

Ministry of Water Resources: [www.mwr.gov.cn](http://www.mwr.gov.cn)

Global Water Partnership: [www.gwpforum.org](http://www.gwpforum.org)

WRDMAP Project Website: [www.wrdmap.com](http://www.wrdmap.com)

## China – UK, WRDMAP

### Integrated Water Resource Management Documents

Produced under the Central Case Study Documentation Programme of the GoC, DFID funded, Water Resources Demand Management Assistance Project, 2005-2010.

#### Documents will comprise of:

Thematic Papers

Advisory Notes

Manuals

Examples

Training Materials

IWRM Document Series materials, English and Chinese versions, are available on the following project website

WRDMAP Project Website: [www.wrdmap.com](http://www.wrdmap.com)

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