**ToT 4 – Multiple-Use Services: combining domestic water supply and irrigation systems smartly – course guide**

This guide provides with an overview of Training of Trainers (ToT) course 4 and its material. It consists of two parts. The first part presents a general overview of the course, including the purpose, the assessment methods, and the programme overview. The second part presents the detailed content and materials of the course. The course is sub-divided into a number of topics. For each topic, the main content is listed, as well as references to literature. Finally, an indicative time frame is provided for each topic.

**Part 1: Course overview**

## Purpose

People in rural areas demand water for different uses in relation to their livelihoods, including domestic uses, such as drinking, cooking and hygiene, and productive purposes, like gardening, livestock and small businesses. Where people develop their own sources, referred to as self-supply, as is often the case in shallow groundwater areas, including around sand rivers, they often do so aiming to meet their multiple needs. But when water is provided by water organizations (utilities, water committees or irrigation agencies), these tend to provide water with a single purpose: either drinking water, irrigation or water for livestock. The underlying reasons for that are in the infrastructure-driven, and sectoral approaches adopted by many water organizations. That means not only that then not all people’s water needs are met, also it may result in users using the infrastructure inappropriately so as to still get access. For example, certain users may use more, or make unauthorised connections, eventually leading to problems with sustainability of the service. To anticipate these situations, a multiple-use services (MUS) approach is proposed, through which the various uses of water are considered in the planning and design of water services. This also includes combining different sources of water to meet their multiple needs.

This ToT course seeks to create an understanding of the factors that affect demands for, and access to, water for multiple uses in rural areas, thereby taking a livelihoods perspective. It also provides an introduction to the MUS approach as a way of planning to meet the multiple needs of water. It also provides insight into the institutional factors that enable or hinder the provision of water services for multiple-uses, and how these can be addressed.

## Learning outcomes

At the end of this course participants are able to:

1. Explain the difference between demand, access and use of water infrastructure and water resources and analyse why often discrepancies are found between these
2. Employ tools to get insight into demand for water for multiple uses
3. Employ tools to assess current levels of access to water and factors that shape that
4. Design approaches for providing water for multiple uses
5. Identify the policy and institutional factors that affect the degree to which multiple use of water is happening

## Duration of course

The training of trainers course has a time dedication of 40 hours. About 32 of these are contact hours, with discussion lectures and field assignments. The other 8 hours consists of self-study through following online lectures.

## Assessment methods and criteria

Though the course will not be formally assessed, participants are expected to carry out three field assignments, which will help to reflect on the extent to which they master the course content. The field assignment allows assesing the capacity of the participant to:

* + apply pre-defined field data collection methodologies
	+ analyse and interpret the results of the field data
	+ present back the results of the field data to the peer group

## Course programme

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| ***Module 1: Access to, demand for, and use of water in rural areas*** |
| Topic 1.1: Water and rural livelihoods |
| Topic 1.2: Demand for, access to, and use of water |
| Topic 1.3: Field assignment: participatory approaches for understanding demand, access and use |
| ***Module 2: The multiple-use approach*** |
| Topic 2.1: Introduction to the concept of multiple-use services |
| Topic 2.2: Multiple-use services approach |
| Topic 2.3: Field assignment: planning for multiple-use around the sand rivers |
| ***Module 3: Service provision for multiple-uses of water*** |
| Topic 3.1: Service delivery models for providing multiple-use services |
| Topic 3.2: Factors affecting the extent to which service delivery models cater for multiple-use services |
| Topic 3.3: Assignment: assessing opportunities of service delivery models around sand rivers for providing multiple-use services  |

# Part 2: ToT Course content and materials

# Module 1: Access to, demand for, and use of water in rural areas

## Learning outcomes

The learning outcomes of this module are:

1. Participants are able to explain the difference between demand, access and use of water infrastructure and water resources and analyse why often discrepancies are found between these and specifically in terms of equity
2. Participant are able to employ tools to assess access to water – and equity in that - in relation to rural livelihoods

## Time dedication

8 hours

## Topic 1.1: Water and livelihoods

### Content

This topic defines what (rural) livelihoods are and how water plays a role in these. Specific topics to be addressed include:

* Livelihoods: basic concepts and types and characteristics of livelihoods in the rural areas
* Role of water use in livelihoods, differentiating between large-scale, smallholder and homestead-based livelihoods, and rural dwellers

### Methods

* Watching an online lecture introducing key concepts of livelihoods and rural water-based livelihoods

### Material

* PPT with lecture notes

### Time dedication

1 hour of online lecture

## Topic 1.2: Demand for, access to, and use of, water

### Content

This topic looks into the differences between demand, access and use of water. It starts by looking into typical water demands that derive from people’s livelihoods. It then looks into the definition of access. Then, different degrees in access and ways of quantifying that are presented, using the service levels. Thirdly it looks into actual use. In this, a differentiation will also be made in access to water resources and to water services. Finally, participants learn to analyse those factors that may lead to a difference between what people demand and what access they have. Specific issues that are looked into are:

* Difference in access to water resources and water services
* Gender and equity in access
* Design norms vs user needs

### Methods

* Watching an online lecture introducing key concepts of demand, access and use of water, and difference in that
* Class room lecture, followed by discussion around discrepancies

### Material

* PPT with lecture notes
* JMP publications on service ladders
* Van Koppen et al
* Naidoo, N., Chidley, C., Main, G. and M. Vrdoljak. 2009. Productive use of domestic piped water for sustaining livelihoods in poor households. WRC Report No. TT 412/09. Pretoria, South Africa: Water Research Commission
* Smits, S., Mejía, T., Rodríguez, S. and D. Suazo. 2010. Effects of multiple-use of water on users’ livelihoods and sustainability of rural water supply services in Honduras. *Waterlines:* 29 (1): 37-51
* Van Houweling, E.; Hall, R.P.; Sakho Diop, A.; Davis, J. and Seiss, M. 2012. The role of productive water use in women’s livelihoods: Evidence from rural Senegal. *Water Alternatives* 5(3): 658-677

### Time dedication

1 hour of online lecture, 1 hour class room discussion

## Topic 1.3: Field assignment: participatory approaches for understanding demand, access and use

### Content

Having seen in the previous topic the concepts of demand, access and use, in this topic participants will familiarise themselves with tools to understand these and where there may be gaps between them. Various participatory rapid assessment tools are presented. Participants will adjust those in a classroom setting, prior to applying them in the field. The specific tools to be practiced with include:

* Water user categorization
* Community mapping
* Village walk
* Household questionnaire

### Methods

* Introductory lecture on the key PRA tools
* Preparation field assignment
* Field application

### Material

* Exercise sheet: practising selected assessment tools
* PPT with lecture notes
* Adank, M., Van Koppen, B. and S. Smits. 2012. *Guidelines for planning and providing Multiple-Use Water Services*. The Hague, the Netherlands: MUS Group

### Time dedication

1.5 hours of classroom lecture and assignment preparation; 2.5 hours of field assignment; 1 hour presenting back

# Module 2: The multiple-use services approach

## Learning outcomes

The learning outcomes of this module are:

1. Participants are able to define what multiple-use services is, both as a concept and an approach
2. Participants are able to explain the different steps in applying a multiple-use services approach, and the objectives and content of those steps
3. Participants are able to apply the planning step of the multiple-use services approach in the geographical context of sand rivers

## Time dedication

9 hours

## Topic 2.1: The concept of multiple use services

### Content

In this topic the concept of multiple-use services is introduced, as an approach to meetings people’s multiple water needs in an integrated manner. It explains why a specific approach to multiple-use services originated and what problems it seeks to address. It also presents different entry points for providing multiple-use services, and discusses the concept of multiple sources for multiple uses. It will illustrate this by a number of case studies from different contexts. It ends by providing some of the critiques and concerns around multiple-use services.

### Methods

* Classroom lecture
* Plenary discussion in classroom setting

### Time dedication

1 hour of classroom lecture and 0.5 hours of plenary discussion

## Topic 2.2: Multiple-use services as an approach

### Content

In this topic, it is argued that multiple-use services can be considered as an approach that is structured according to a standard planning or programming cycle. The main steps in that cycle are presented, as well as various participatory tools that can be applied in each step in the process. For the main steps in the process, a number of options are presented to make the multiple-use services approach tangible.

### Methods

* Classroom lecture, followed by classroom discussion

### Material

* PPT with lecture notes

### Time dedication

1 hour classroom lecture, 0.5 hour of plenary discussion

## Topic 2.3: Field assignment: planning for multiple-use services around sand rivers

### Content

In this topic, participants will apply the methods and tools for planning for multiple-use services around sand rivers. This will partially be done in the field, whereby further insights are obtained from the village, followed by a planning session in a group work. In this assignment, participants will set a vision of the levels of access that are needed to bridge discrepancies between demand and access. They will then define strategies for meeting those demands, and identify the combinations of technologies that would be required.

### Methods

* Field visits
* Classroom discussions

### Material

* PPT with lecture notes
* Assignment sheet

### Time dedication

0.5 hour classroom introduction, 2.5 hour field visit, 2 hour elaboration of assignment, 1 hour presentation

# Module 3: Providing services for multiple uses of water

## Time dedication

8 hours

## Learning outcomes

The learning outcomes of this module are:

1. Participants are able to define different service delivery models that are commonly found around rural water supply
2. Participants are able to argue the extent to which different service delivery models can typically cater for water for multiple-use services, and identify measures that can be taken to overcome limitations within each serviced delivery model
3. Participants are able to identify common institutional barriers to a MUS approach
4. Participants are able to identify opportunities and barriers to a MUS among the current water institutions around sand rivers

### Time dedication

## Topic 3.1: Service delivery models for multiple-use services

### Content

In this topic, the concept of service delivery models is introduced, and the most common models for service delivery in rural areas, including their main characteristics are presented. These include: self-supply, community-based management, utility management and (irrigation) agency management.

### Methods

* Online lecture

### Material

* PPT with lecture notes

### Time dedication

1 hour online lecture

## Topic 3.2: Factors affecting the extent to which service delivery models cater for multiple-use services

### Content

In this topic, for each of the service delivery models presented in topic 3.1, a summary is made of their main strengths and weaknesses, particularly related to the extent to which the service delivery models caters for multiple use services. Common barriers are highlighted within each service delivery models, as well as specific measures that can be undertaken to overcome these barriers. This includes barriers that relate to MUS, but also broader characteristics that enable or inhibit MUS. This ends by discussing cross-sectorial barriers and opportunities that enable or hinder MUS.

### Methods

* Classroom lecture and plenary discussion

### Material

* PPT with lecture notes

### Time dedication

1 hour classroom lecture, followed by 0.5 hour plenary discussion

## Topic 3.3: Assignment: assessing opportunities of service delivery models around sand rivers for providing multiple-use services

### Content

In this topic, participants will apply the concepts of topics 3.1 and 3.2 to the specific situation of the communities around the sand rivers. They will identify the main service delivery models present in the area, define the main characteristics of the service delivery model and assess opportunities and barriers for applying a MUS approach under it.

### Methods

* Introduction to the assignment in the classroom, interviews with main service providers and uses, analysis and presentation of results

### Material

* PPT with lecture notes
* Assignment sheet

### Time dedication

0.5 hour classroom introduction, followed by 1 hour preparation for assignment, 2 hour for interviews, 1 hour processing results and 1 hour presentation

# Reflection meeting

At the end of the course, the participants will discuss which aspects of the ToT would need to be covered under the Tailor-Made-Training (TMT). This will include a discussion on:

* Relevance; which of the sub-topics are most relevant to be included in the TMT, and which ones less so
* Effective learning methods: which of the parts of the course allow effective learning (online lectures, classroom lectures, group discussions, field assignment), and which ones would need to change the didactics in order to be included in the TMT

# Proposed schedule of the week

Prior to the week: viewing online lectures

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| --- | --- | --- | --- | --- | --- |
|  | Monday 15-8 | Tuesday 16-8 | Wed 17-8 | Thur 18-8 | Fri 19-8 |
| Morning- part 1 | Welcome and introduction | Feedback from field assignment 1.3 | Field assignment 2.3 | Interviews assignment 3.3 | Reflection meetingClosure ToT |
| Morning- part 2 | Classroom lecture topic 1.2 Introduction assignment topic 1.3 and preparation field assignment | Lecture topic 2.1 | Processing results field assignment 2.3 | Processing results assignment 3.3 |  |
| Afternoon – part 1 | Field assignment 1.3 | Lecture topic 2.2 | Presentation field assignment 2.3 | Presentation results assignment 3.3. |  |
| Afternoon – part 2 | Field assignment 1. | Preparation field assignment 2.3 | Lecture topic 3.2Introduction to assignment 3.3 and preparation |  |  |