



Royal Netherlands
Meteorological Institute
Ministry of Infrastructure and the
Environment



JOINT COOPERATION PROGRAMME

Component B: Water resources management planning and Integrated Water Resources Management (IWRM) tools

Document B3.2

Document on the *Integration of the JCP with the WMO RA5 Training Centre for Hydrology*

May 2011

Project: 1201430.000

Client: Water Mondiaal
Partners for Water
Royal Netherlands Embassy in Jakarta

Period: January 2011 – March 2013

Integration of the Joint Cooperation Program with the WMO RA5 Training Centre for Hydrology

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Introduction

The present document provides a draft proposal on the possible collaboration/partnership between the Joint Cooperation Program project and the establishment of a WMO Regional Training Centre for Hydrology (RTC-H) for RA V at the Water Resources Research Centre PusAir, Bandung, Indonesia. For PusAir to meet technical and organizational standards to act as RTC-H, capacity building and strengthening of the local knowledge base may be needed. This would assist the institute to establish itself as a regional knowledge hub.

In view of the fact that the Dutch-sponsored Joint Corporation Program (JCP) has been set up in 2010, and has started working on knowledge transfer with the aim to strengthen PusAir in achieving the status of an advanced national water resources research centre, it would be advantageous to use the JCP efforts as a starting point to build up the position of PusAir to meet the responsibilities and international role as RTC-H.

The goal of this document is to identify common ground between the ongoing JCP and the needs of PusAir to meet the WMO standards to qualify as RTC-H. To address this issue we first start with a brief description of both initiatives to then provide a preliminary list of common interests and points of action to be pursued

The Joint Cooperation

The Joint Cooperation Project (JCP) is a cooperative venture between the Indonesian PusAir and BMKG and two Dutch partner Institutes, Deltares and KNMI. PusAir is a hydraulic research institute, working in a similar field as Deltares, while BMKG is the Indonesian Met Service, counterbalanced in the project by the Dutch Metoffice KNMI.

The objective of the cooperation (as stated in the Joint Cooperation Agreement) is long-term knowledge sharing and capacity building between the four participating institutes. The ultimate aim is to increase the state of the art of the knowledge base of all the institutes involved and to strengthen the capacity in Indonesia to plan, develop and manage their (marine and fresh) water resources systems. Institutional strengthening applies not only to the separate Indonesian institutes BMKG and PusAir but also to mutual cooperation.

The institutional strengthening applies also to the two Dutch institutes KNMI and Deltares as the cooperation offers the opportunity to further develop their knowledge, tools and experience. The growing socioeconomic pressures have resulted in climate change and water resource management becoming global issues requiring that KNMI and Deltares continue to act as international expert players in their respective fields.

The joint cooperation should also be envisaged as a further elaboration of the Water Mondiaal program (Water at a world wide scale) initiated by the Dutch Government and which is an integral part of the national policy as defined by the National Water Plan (2010-2015). Water Mondiaal aims to establish long term collaborative partnerships with 5 major river delta areas in the world, including Indonesia. These partnerships seek to develop effective adaptation strategies in the light of climate change and interchange expertise to achieve sustainable development objectives.

The Dutch Ministry of Transport, Public Works and Water Management (Ministry V&W) is the lead organization in establishing the cooperation with Indonesia. The two Dutch partners entertain close ties with the Ministry V&W as their mandate and funding is to a large extent guaranteed and controlled by this Ministry. The Joint Cooperation described in this document fits perfectly in the collaborative partnership agenda's of Water Mondiaal and supports the Ministry V&W in the execution of this program.

The Joint Cooperation Program (further referred to as JCP) is designed for the period 2010 – 2015. The first two years (first phase 2010-2012) have a clearly set out work plan and are fully funded. For the subsequent three years (second phase 2013-2015) following the first biennium the work plan needs to be further extended and funding secured.

The JCP consists of a collection of thematic areas, within which projects are carried out. The thematic areas are highly relevant for the entire RA V region and include:

- Institutional development/planning
- Integrated water resources management
- Lowland/peatland management and planning
- Flood and drought risk management

Each thematic area includes a series of collaborative R&D projects and/or ties in with ongoing World Bank or ADB sponsored consulting activities in the water resources sector. The JCP proposal document provides additional detail as to the projects.

It is important to note that the above projects have as a requirement the strengthening of capacity and the buildup of knowledge and include the delivery of state-of-the-art scientific-technological training modules in order to enable project partners to participate and execute project work.

WMO Regional Training Centre

One of the primary aims of the WMO, as laid down in its Convention, is to encourage training in meteorology and operational hydrology, and to assist in coordinating the international aspects of such training. In this context, the Education and Training Program (ETRP) is a WMO Major Programme, the purpose of which is to assist Members in particular developing countries and countries with economies in transition, in obtaining personnel specially educated and trained to internationally agreed standards in order to carry out the activities and operations of NMHSs required at the global, regional and national levels for the effective provision of meteorological and hydrological services in support of sustainable development of Member countries.

Overall objective of WMO training activities:

- To ensure the availability of adequately trained staff to meet Members' responsibilities for providing meteorological, hydrological and related information and services;
- To promote capacity building by assisting NMHSs in the attainment of an appropriate level of self-sufficiency in meeting their training needs and in developing their human resources;
- To promote and strengthen the exchange of training knowledge, resources and expertise between Members and WMO Regional Training Centers (RTCs) making particular use of relevant new and emerging technologies and techniques;
- To promote high-quality continuing education in meteorology, climatology, hydrology and related disciplines so as to keep Members' relevant staff up-to-date with the latest scientific advances and technological innovations, and to provide the competence and skills needed in additional fields, such as communication with users; and
- To assist in the education of the public, government and other interested parties about the socio-economic benefits of meteorological, hydrological, oceanographic and related services.

The WMO *Regional Training Centre in Hydrology* (RTC-H) to be implemented at PusAir (Bandung), is the first one of its kind (e.g. dedicated to Hydrology and Water Resources Management) to be established world-wide. The Centre should act as regional hub to pursue the goals laid out under the ETPR for member countries of RA V. The regional training centre should serve as reference point for staff of National Hydro-Meteorological services in the region.

The offered training courses must satisfy clearly set standards and meet strict quality control.

Areas of intersection between WMO RTCH and the JCP initiatives

The aim of the present document is to point out areas of interest, which the JCP and the establishment of a regional centre of Hydrology have in common and identify areas of intersection. This should be done in particular in view of the second phase of the JCP (2013-1015), which still needs to be fully shaped and for which financing needs to be secured.

The following common points of interest have been identified:

- JCP already delivers training modules for PusAir personnel for JCP-related project work and topics. To date the main focus is on Indonesia due to the prevalently national scope of JCP.
- The training includes general principles of hydrology, hydraulics, operational forecasting, data use, data sharing and management, including advanced modeling tools and methodologies.
- The scientific-technological content of training modules is sufficiently general to be of direct interest and exportable to other RA V members.
- Current JCP training activities can be tailored in such a way as to strengthen capacity at PusAir and to enable the Institute to meet its regional role as host for the RTC-H. The training activities can be organized to satisfy WMO standards and requirements.
- JCP training courses can be made accessible to staff of National Hydro-Meteorological Services or equivalent organizations of RA V Member countries, and potentially other Member countries (e.g. RA II).
- Expert staff from bodies already involved as external partners in the JCP (e.g. CSIRO, Australia or NIWA, New Zealand) can be co-sponsored to deliver knowledge-sharing and training modules of relevance for National Hydro-Meteorological Services or equivalent organizations of RA V members.
- The thematic areas addressed by the JCP, concerning operational water resources management, are highly relevant for multiple RA V members with similar climate, population density and/or development level as Indonesia. Examples include Malaysia, Papua New Guinea and the Philippines.
- The similarity of problem areas between countries should facilitate direct knowledge-transfer between the JCP and the WMO RTC-H. Relevant fields of interest include:
 - observing techniques
 - data organization and sharing
 - regional climate impact analysis
 - advanced operational forecasting technologies

- water resources management
 - river basin administration
 - peat-land management for CO2 emission control
- The cooperation between the RTC- H and the JCP may contribute to increase the success in raising donor funds. The JCP corroborates the quality of the RTC-H. The RTC-H in combination with the JCP could become an attractive target for donor funding beyond 2012.

Points of Action

Pending formal ratification of the RTC-H by WMO's Executive Council (EC) in June 2012, the following points of action should be taken in upcoming months:

- Support of PusAir by the JCP in working out a strategic plan document for necessary training and capacity building activities, based on the assessment of the needs of NMHSs of RA V, towards the establishment of the RTC-H.
- Elaborate a training plan/schedule for training courses to be held at PusAir.
- Support of PusAir and BMKG through the JCP within the already funded first phase (2010-2012) in delivering courses and building up curricula of staff to meet RTC-H requirements and directed at RA V needs.
- Explore sources of additional funding to support the implementation of the RTC-H with support from JCP beyond the already funded Phase 1 and throughout the Phase 2.

Conclusions

The present document constitutes a first draft working version on identifying a potential structure of common interest between the JCP and the WMO RTC-H. Amendments to the document by all parties involved are welcome.

Minutes from the Meeting at WMO, Geneva Convention Centre, 25 May 2011

The meeting was held on the occasion of the 16th WMO Congress in Geneva. The following persons were present at the meeting.

- Mr Claudio Caponi (Chief Capacity Building Hydrology/WMO)
- Mr Jeff Wilson (Director Education and Training Office/WMO)
- Mr Bruce Stewart (Chief Basic Systems Hydrology/WMO)
- Mr Arie Moerwanto (Director Pusair)
- Mr Paolo Reggiani (Deltares/JCP)

The meeting was held as a breakout session from the ongoing Congress activities.

The following issues were discussed:

- The planned RTC-H with a principal hydrological focus would be the first of this type to be established. The other already existing centers (about 23) have mainly a meteorological focus with, in a few cases, a minor hydrological component.
- Until recently RA V had received relatively little attention with respect to other RA's in hydrological training. The establishment of a RTC-H is therefore in principle welcomed.
- The RTC-H has not yet been approved during the present Congress, but has a chance of being recommended to EC by the Panel responsible for its assessment, by March 2012. The case needs to be sufficiently supported by the Education and Training Program (ETRP) in an assessment report prepared by the Director of Education and Training.
- Adding a supporting document to the assessment report, in which a first set of activities to start up the RTC-H are listed or mapped out, will strengthen the case for the application.
- The supporting document must be submitted by PusAir as the applicant for the RTC-H.
- It was emphasized that to ensure continuity of the RTC-H, the centre will be subject to regular evaluation over time. The status could also be withdrawn if the requirements defined at the start were not met over time.
- Mr. Caponi observed that the affiliation of the JCP with the RTC-H increases the potential to make the JPC activities in relation to RTC-H attractive for donor funds.
- Currently WMO makes use of the COMET-METED e-learning modules and tools. These modules are prepared by the University Cooperation of Atmospheric Research (UCAR) in Boulder. The e-learning modules however

are mainly geared towards meteorology, whereby hydrology constitutes about 20% of the content.

- Subjects of interest in training programs are general courses of hydrology and hydraulics, including measurement techniques and data handling. However, also issues such as downscaling of weather forecasting and climate forecasting products to the regional scale and the utilization of these products to perform forecasts on floods. Droughts and water resources development are subjects to be addressed within the RTC-H.
- All course modules must be sufficiently general to interest and apply to all RA V members.
- The establishment of the centre increases the possibility of access to WMO fellowship program by RA V Members. This program enables *i)* participants from RA V members to attend training at the RTC-H or *ii)* staff from the RTC-H to facilitate courses elsewhere.
- Through involvement in the RTC-H, JCP can, if interested, be involved in the selection of candidates that are applying for the WMO fellowship programs described above.
- The fellowship program covers subsistence and travel costs for fellows.
- WMO has the possibilities to contribute for the travel of specific experts to the RTC-H to deliver training activities.
- The association JCP- RTC-H can lead to cost-sharing in training activities.
- A focal point from the side of the RTC-H needs to be put forward to facilitate correspondence. Mr. Moerwanto pointed out that Dr. Francisca Mulyantari, currently head of research at PusAir, will be nominated focal point for the RTC-H.
- Mr. Caponi, Mr. Wilson and Mr. Reggiani pointed out that e-mail communication with PusAir is difficult and in part slow. Mr. Moerwanto assured that communication would be more active in the future.
- Regarding the points of action identified in the initial document by JCP, it was agreed that there was no need for an MoU, as agreements for the JCP already exist between Deltares, PusAir, BMKG and KNMI. Once the RTC-H is ratified, all members of the JCP are in principle linked to the RTC-H via the agreements underlying the JCP.
- Involvement of BMKG in the RTC-H is desirable on the medium to long term.
- Mr Stewart agreed to commence the exercise of identification of the training needs for RA V, based on existing documentation. One of the key first steps

for PusAir will be to confirm these training needs an start to show the role PusAir will play in addressing these needs.