



WRIC News Letter November 2006

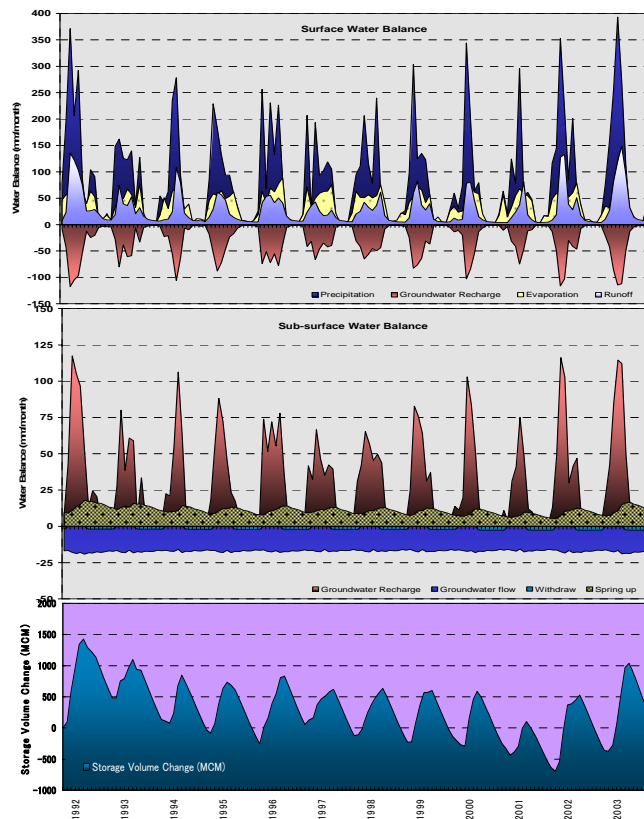
1. Water Balance in Coastal Basin

The average of annual rainfall in the Coastal Basin is about 1,000mm. There are various sizes of dams (19 dams), which are especially used for irrigation. For a drinking purpose, springs and groundwater have been utilizing without the shortage of water so far. While in the Capital of Syria, Damascus has suffered the serious water deficit caused by the rapid population increase since 1980's. Especially in drought year, groundwater level had been dropping even to cause a number of dry wells.

Last year, model simulation in the Barada-Awaj Basin has been executed by using Synthetic Storage Model (SSM). Subsequently this year, modeling works for the Coastal Basin have been carried out to clarify the current water balance and to verify the feasibility of several new water development plans for the near future.

In the Coastal Basin, hydrogeological information is not enough to construct an accurate model. Although, under such a situation, current water balance was calculated experimentally by SSM model as long as we could, as mentioned below.

Because of high precipitation in this Basin, groundwater storage has been kept positive balance for this 13 years, 1991-2003 (plus 7.8MCM/a). During the periods, in the surface system, the total area rainfall is estimated 1,016.4mm/annual (5,650MCM/a). Out of this, 448.3 mm/a (44.1%) is lost by evaporation, and 353.9¹⁾ mm/a (34.8%) is of



Water Balance Calculated by SSM (1991-2003)

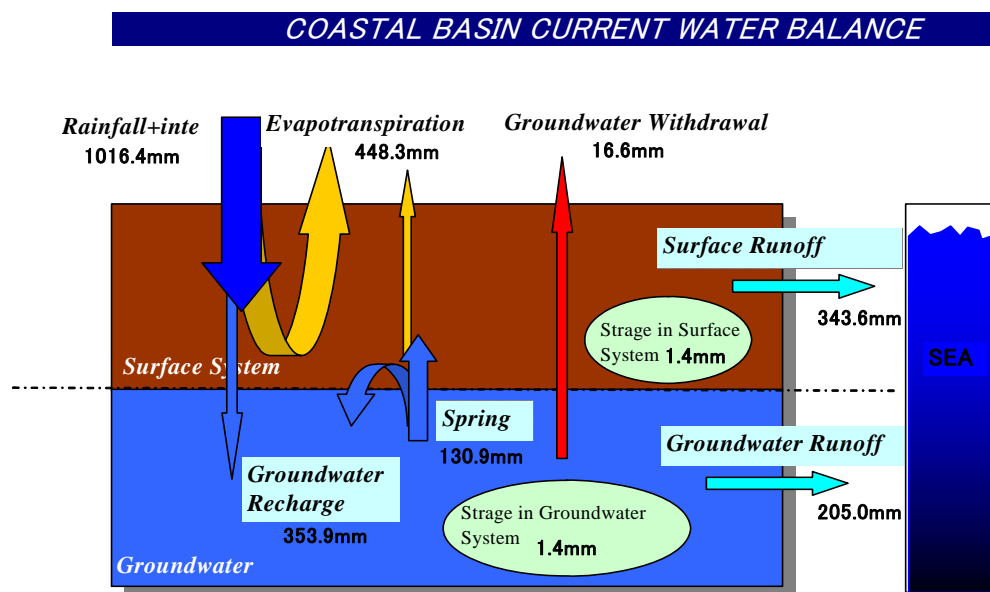
¹⁾ *within this, 130.9 mm/a (12.9%) is for spring discharge



groundwater recharge, 343.6 mm/a (33.8%) is surface runoff. The remaining 1.4 mm/a is storage balance in Surface System.

On the other hand, in the sub-surface system, in contrast to the input value 353.9mm/a of the groundwater recharge, 130.9mm/a is of spring-up, 16.6mm/a (92 MCM/a) is groundwater extraction, and 205.0 mm/a (1,139 MCM/a) is of groundwater runoff from the Coastal Basin to the Mediterranean sea are calculated.

As a result of this simulation, total discharge of both surface and groundwater runoff, which flow out to the Mediterranean sea were amounted to around 3,050 (MCM/a). The reliability of this calculated number should be examined by more detailed studies. The other case studies for the future prediction depending on this result are still on going. This calculated number show us at least, that the Coastal Basin has a plenty of unused water resources. It might be supposed that the Coastal Basin have much possibilities to get more expectable and water utilization not only within the own Basin but also for the countrywide in the future!



Result of Water Balance Analysis by using SSM
(average of 13 years in water year from 1991/92 to 2002/03)

Current Water Balance in Coastal Basin

2. Project Evaluation of WRIC starts

Project evaluation starts on Nov. 26th, which compares the comprehensive plan called Project Design Matrix (PDM) and outcomes of a project, in order to obtain recommendations for the project as well as

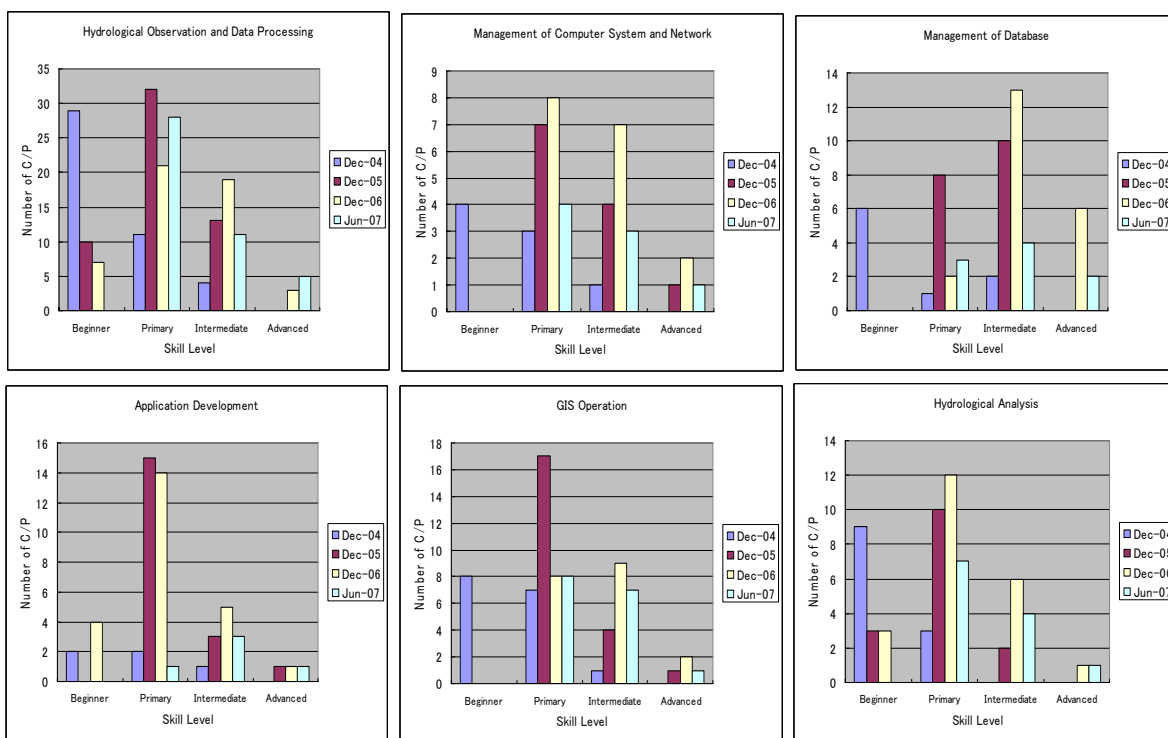


lessons learned for other similar projects. As for WRIC project, the last project evaluation was conducted on Oct. 2004. This time, therefore, the main focus of the evaluation is the achievement in the past two years after Oct. 2004. The evaluation work will be done by Syrian and Japanese joint evaluation team, which consists of four Syrian and five Japanese members. This joint evaluation seems to make the evaluation more objective and transparent.

As for methodology of evaluation, in accordance with our Project Cycle Management Method, comparison between a plan and outcomes is to be done based on the five evaluation criteria of “**efficiency**”, “**effectiveness**”, “**impact**”, “**relevance**” and “**sustainability**”. In advance of the mission, Japanese experts made the self-evaluation of this project. As a result, in general, it was found that technical transfer in the fields of hydrological observation, database/GIS management and hydrological analysis etc seems considerably successful. Considering the very low technical level of our Syrian counterparts in the beginning of this project in June 2002, especially, the current technical level of each Syrian staff is incredible. The chart below shows the number of Syrian counterparts in each technical field and each technical level. It is found that the progress of the technical transfer year by year after Dec. 2004 was quite successful, and the current situation almost satisfies the expected target level at the end of this technical cooperation project in June 2007. Thus, the “technical” transfer has been conducted very successfully. On the other hand, however, we now have very big concern for the sustainability of WRIC. It is because of the weakness of the management ability, organizational and institutional situation of WRIC. As for the management, especially in WRIC Main Center, the directors and managers seem not to have shared enough responsibility and awareness of the project management. Moreover, mission and function of WRIC are not clearly imbedded in the actual decision making process of MOI. As for the organization, especially, the current and future division of responsibilities between WRIC and Directorate of Integrated Management of Water Resources (D/IMWR) is not at all clear, which have been pointed out by Japanese experts, as well as by German experts in their water sector report issued in Sep. 2004. Even if the technical level of each Syrian counterpart has been developed, these factors may endanger the sustainability of WRIC in future. These points will be also reviewed in this evaluation process.



The evaluation mission lasts from Nov. 26 to Dec. 14th. We hope that this evaluation process will be useful and fruitful for the future of WRIC.



Distribution of the number of WRIC Syrian C/Ps, corresponding to each technical field and skill level

*It is evaluated by Japanese Experts of WRIC. **The sum of the number does not correspond to the actual staff number of WRIC, because one person may be counted in several technical fields.

3. Mr. Kodama, Expert for Hydrology, came back to Syria

Mr. Kodama, hydrologist came back to WRIC on Nov. 12th, one year after he left Syria last time. This time, he will stay in Lattakia and Tartus until Feb. 7th in order to enhance hydrological observation in coastal basin. At this moment, especially, coastal basin has problems of surface water observation, mainly because of the lack of H-Q curve.

For instance, in coastal basin, total 54 of automatic surface water level sensors have been installed by Japanese Grant Aid project. In almost all these stations, however, appropriate H-Q curves are not available so far. Therefore, it is impossible to convert observed water level to discharge.



Mr. Kodama (Hydrologist)



For the preparation of H-Q curves, many preconditions should be fulfilled such as appropriate cross section and equipment installation at stations, suitable timing of current measurement on site, organizational preparation for the current measurement activities in the case of flood, and so on. Mr. Kodama will assist and encourage such activities in coastal basin for about three months.

4. WRIC Groundwater Modeling Seminar 2006 will be held next month

Many organizations including WRIC have conducted model simulation works for the water resources management in Syria. In the past, however, the experience as well as the result of such simulation works has not been shared by the related people. Therefore, WRIC is going to hold **WRIC Groundwater Modeling Seminar 2006** on December 18th 2006. In this seminar, WRIC staff will present their modeling activities by using SSM and MODFLOW, which include the water balance in Barada-Awaji basin and coastal basin as well as the detailed groundwater simulation in several sub-basins.

In addition, representatives of the related organizations in Syria such as the Water Resources Directorate and Water Pollution Directorate of MOI, Dutch Water Cooperation project in Orontes basin, ACSAD, DAWSSA, Ministry of Agriculture etc will make presentations.

We hope that the seminar will be useful for the people and organizations in water sector in Syria to enhance the information sharing and the cooperation with each other. Detailed contents of the seminar will be reported in the WRIC Newsletter next month.

(End)

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