**2. Water Accounting Database Application (WADA)**

The WADA has limited use in its present state. It can only compute water balance by river reach between two hydroposts. Due to lack of perception, evaporation, water use and basin outflow data, it is impossible to carry out the basin water balance analysis and water supply and demand balance computations. Moreover, this database design is not as flexible as the other two because the basin management zones are fixed at five (see the main menu on the left). If the MEWR decided to regroup the river basins other than the exiting five in the future, this database would require major programming to accommodate the changes.

### WADA

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| --- | --- | --- | --- |
| **No.** | **Recommended data for the WADA** | **WADA is ready to hold the data sets as of Jan 2020 (Yes/No)** | **Remarks** |
| **A** | **Dynamic/Time Series Data** |  |  |
| 1 | Daily average water level and water discharge from the hydroposts on rivers, canals and collectors | Yes | Import the data from BPDA and IMIS. |
| 2 | Main canal details | Yes | Import the data from NGDA or BPDA |
| 3 | Irrigation system details | Yes | Import the data from IMIS. |
| 4 | Water use by sector (i.e., agriculture, drinking, industry and mining) | See remarks | Import the use data from BPDA and IMIS later under ZIRMIP. |
| 5 | Precipitation | No | Import the data from Hydromet and/or BPDA later under ZIRMIP. |
| 6 | Evaporation | No | Import the data from Hydromet and/or BPDA later under ZIRMIP. |
| 7 | Water balance analysis by river reach | Yes |  |
| 8 | Water accounting – water supply and demand balance | No | To be added under ZIRMIP. |
| 9 | Water balance by basin | No | To be added under ZIRMIP. |
| **B.** | **Static/Reference Data** |  |  |
| 1 | Rivers | Yes | Import the river attributes from NGDA |
| 2 | River hydroposts | Yes | Import the river hydropost attributes from NGDA |
| 3 | Main canal water intakes | Yes | Import the intake attributes from NGDA |
| 4 | Collector hydroposts | Yes | Import the collector hydropost attributes from NGDA |
| 5 | Reference materials | Yes |  |
| C | **Database functions** |  |  |
| 1 | Data input, edit and delete | Yes |  |
| 2 | Data collection forms | ---- | Not necessary |
| 3 | Data import and export utilities | Yes | Data import and export utilities (text or worksheet formats) |
| 4 | Reports | No | Water balance by river reach report will be available by Feb 2020 |
| 5 | Maps | Yes | River hydroposts, main canal intakes, collector hydroposts |
| 6 | Graphs and charts | Yes | Hydropost data (i.e., water level, discharge, volume, temperature) |
| 7 | Calendar | Yes |  |

Recommendations for improving the WADA are:

1. Update the TJ logo and MEWR image of the login page to match the style and size of the IMIS login page.
2. Replace the “Welcome” page with a “Main” page with a photo of a river basin on the left and a short description of the database application on the right, similar to the BPDB main page by February.
3. Add a new menu item – “Water balance” with sub-menus – River Reach Balance, Supply and Demand Balance and Basin Balance and move the “Water balance of the Kofarnihon river Tartki section - Pyanj river” under the River Reach Balance submenu by February.
4. Replace “© VIS 2020, with the support of Dusti-A LLC” on the bottom of the page with Copyright © 2020 Министерство энергетики и водных ресурсов Республики Таджикистан by February.
5. Build a database report for “water balance by river reach” by February.
6. Populate the application with actual data from the Kofarnihon Basin, not just a sample set. The staff members from the two RBO/Kofarnihon offices will perform the data entry tasks under the supervision of the WIS team after February.
7. Carry out additional database programming and data collection to perform the intended water accounting and balance computations after February.
8. Build two water use reports (similar to the ones used by the ICWC) – annual water use by sector and 10-day water use by sector during a vegetation period after February.
9. Build additional database reports as needs arise later.