Format for Biennial Reports by UNESCO’s Water-related Centres on activities related to the IHP in the period (June 2014 – May 2016)

1. Basic information on the centre

<table>
<thead>
<tr>
<th>Name of the Centre</th>
<th>Water for Sustainable Development and Adaptation to Climate Change (WSDAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Director</td>
<td>Prof. dr. Milan Dimkic</td>
</tr>
<tr>
<td>Name and title of contact person (for cooperation)</td>
<td>Nikola Zlatanovic, Deputy Director</td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:nikola.zlatanovic@jcerni.co.rs">nikola.zlatanovic@jcerni.co.rs</a></td>
</tr>
<tr>
<td>Address</td>
<td>Jaroslava Cernog 80, 11226 Belgrade, Serbia</td>
</tr>
<tr>
<td>Location of centre</td>
<td>city/town Belgrade; country Serbia</td>
</tr>
<tr>
<td>Geographic orientation</td>
<td>☑️ global</td>
</tr>
<tr>
<td>Region(s) (for regional centres)</td>
<td>Southeast Europe</td>
</tr>
<tr>
<td>Year of establishment</td>
<td>2013</td>
</tr>
<tr>
<td>Year of renewal assessment</td>
<td>April 2013</td>
</tr>
</tbody>
</table>

Signature date of most recent Agreement April 2013

2. Themes of activities during reporting period

<table>
<thead>
<tr>
<th>Focal Areas ♦</th>
<th>groundwater</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>urban water management</td>
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<tr>
<td></td>
<td>rural water management</td>
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<tr>
<td></td>
<td>arid / semi-arid zones</td>
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<td></td>
<td>humid tropics</td>
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<td></td>
<td>cryosphere (snow, ice, glaciers)</td>
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<td></td>
<td>water related disasters (drought/floods)</td>
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<tr>
<td></td>
<td>Erosion/sedimentation, and landslides</td>
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<tr>
<td></td>
<td>ecohydrology/ecosystems</td>
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<td></td>
<td>water law and policy</td>
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<td></td>
<td>social/cultural/gender dimension of water</td>
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<tr>
<td></td>
<td>transboundary river basins/ aquifers</td>
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<tr>
<td></td>
<td>mathematical modelling</td>
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<tr>
<td></td>
<td>hydroinformatics</td>
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<tr>
<td></td>
<td>remote sensing/GIS</td>
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<tr>
<td></td>
<td>IWRM</td>
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<td></td>
<td>Watershed processes/management</td>
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<tr>
<td></td>
<td>global and change and impact assessment</td>
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<tr>
<td></td>
<td>mathematical modelling</td>
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<tr>
<td></td>
<td>water education</td>
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<td></td>
<td>water quality</td>
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<tr>
<td></td>
<td>nano-technology</td>
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<td></td>
<td>waste water management/re-use</td>
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<tr>
<td></td>
<td>water/energy/food nexus</td>
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<tr>
<td></td>
<td>water systems and infrastructure</td>
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<tr>
<td></td>
<td>other: (please specify) ___________________</td>
</tr>
</tbody>
</table>

3. Scope of Activities ♦

<table>
<thead>
<tr>
<th>Scope of Activities ♦</th>
<th>vocational training</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>postgraduate education</td>
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<tr>
<td></td>
<td>continuing education</td>
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<tr>
<td></td>
<td>public outreach</td>
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<tr>
<td></td>
<td>research</td>
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<tr>
<td></td>
<td>institutional capacity-building</td>
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<tr>
<td></td>
<td>advising/ consulting</td>
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<tr>
<td></td>
<td>software development</td>
</tr>
<tr>
<td></td>
<td>data-sets/data-bases development</td>
</tr>
</tbody>
</table>

* check on appropriate box
♦ check all that apply
| Support bodies 1 | ☐ other: (please specify) __________________ |
| Hosting organization 2 | Institute for the Development of Water Resources "Jaroslav Cerni" |
| Sources of financial support 3 | ICPDR, IWA, UNESCO category II centres, University of Beijing, ISRBC, University of Novi Sad |
| Existing networks and cooperation 4 | ☑ director and governing board |
| | ☐ other: (please specify) __________________ |
| | Link to election of board members to the IHP Intergovernmental Council (IGC) and hosting country IHP National Committee |
| | Frequency of meetings: once every __year(s) |
| | ☐ Existence of UNESCO presence at meetings |
| Governance | Director General of the Institute for the Development of Water Resources "Jaroslav Cerni", Professor at University of Novi Sad |
| Institutional affiliation of director | total number of staff (full-time, or equivalent) :

number of staff who are water experts:

number of visiting scientists and postgraduate students: |
| Number of staff and types of staff |
| Annual turnover budget in USD |

2. Activities undertaken in the framework of IHP in the period June 2014 – May 2016

2.1 Educational activities (i.e., those with accreditation) that directly contributed to the IHP-VIII (Appendix 1) and WWAP

*Please include here those activities which led to accreditation of degrees, or those held in formal school settings.*

- Courses on groundwater at the University of Novi Sad
- Planned courses at the University of Namibia and Politech in Namibia

2.2 Research activities that directly contributed to the IHP-VIII activities

*Please include research/applied projects outputs such as publications that directly contributed to the IHP-VIII and WWAP objectives*

- Journal "Water Research and Management", co-published by WSDAC host institution JCI
- Proceedings of the Milankovitch Anniversary UNESCO Symposium "Water Management in Transition Countries as Impacted by Climate Change and Other Global Changes, Lessons from Paleoclimate, and Regional Issues", 3-5 September 2014, Belgrade, Serbia
- Publications in international Journals listed in Annex 8.1

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1 please specify bodies that cover the operational costs of the centre, and other essential costs such as salaries and utility bills, and that provide institutional support to ensure centre’s sustainability

2 if different from support bodies

3 please specify sources of main budgetary and extrabudgetary funds to implement projects

4 please write international networks, consortiums or projects that the centre is part of, or any other close links that the centre has with international organizations or programmes, which are not already mentioned above
As G-WADI Secretariat for Southeast Europe, conducted research efforts to advance application of satellite-based rainfall and soil moisture.

WSDAC Director is currently mentoring 4 PhD students from University of Novi Sad and University of Belgrade in their respective theses in the fields of groundwater flow and alluvial aquifers.

2.3 Training activities that directly contributed to the IHP-VIII and WWAP objectives

3. Collaboration and linkages

3.1 Participation in major international networks, programmes, partnerships with other UN or other International Agencies, media and professional bodies

- Cooperation with IWA, WMO, FAO, ICPDR, ISRBC

3.2 Participation in meetings related to the IHP and UNESCO (e.g. the UNESCO General Conference, the UNESCO Executive Board, the IHP Intergovernmental Council and/or other meetings organized by IHP)

- As G-WADI Secretariat for Southeastern Europe:
  - organized meeting titled "Launching of South East European G-WADI Network and IDI expert group meeting; Data tools and methodologies to address floods and droughts in the Member States" in Belgrade, Serbia, December 2014
  - participated in Global G-WADI Advisory Group Meeting, Feb 19, 2016, Khartoum, Sudan
  - participated in Asian IDI-G-WADI meeting. 16-19 June, 2015, Teheran, Iran
  - participated in the International Expert Symposium "Coping with Droughts: Building a community of practice on drought management tools", 19-21 November 2014, Santiago de Chile, Chile

- Participated at the 21st session of the IHP Intergovernmental Council in Paris, France June 18-20, 2014.
  - participated at the UNESCO Category 2 centres Director’s meeting, UNESCO Headquarters, June 2014
  - participated at the G-WADI special side-event, UNESCO Headquarters, June 18th 2014

- Participation at the 7th UNESCO Global FRIEND Water Conference, 7-10 October 2014, Montpellier, France

- Member of WSDAC participated in Exchange program organized by United States Mission to UNESCO in collaboration with the Secretariat of UNESCO IHP, titled: " International Visitor Leadership Program: Water Resources Management in the U.S. for UNESCO", June 2015

- Contribution to UNESCO IHP programme on Water Governance through the design and organization of special session, titled: Implementing IWRM Especially for Transition Countries, under the theme 3.4 SMART Implementation of IWRM, on the 7th World Water Forum, Daegu, Korea, in April 2015.

- Participated at the First UNESCO Science Centres Coordination Meeting, hosted by the Chinese Academy of Engineering, Chinese Academy of Sciences, UNESCO Category 2 centres IKCEST and HIST, with the support of the Chinese National Commission for UNESCO, May 15-18, 2016, Beijing, China

3.3 Collaboration and networking with other UNESCO category 1 or 2 institutes/centres
- UNESCO C2C ICHARM, International Centre for Water Hazard and Risk Management, Tsukuba, Japan
- UNESCO C2C ERCE, European Regional Centre for Ecohydrology, Poland
- UNESCO C2C IRTCUD, International Research and Training Centre on Urban Drainage, Belgrade, Serbia
- UNESCO C2C ICIWaRM, International Center for Integrated Water Resources Management, USA
- UNESCO C2C RCWH, Regional Centre on Capacity Development and Research in Water Harvesting, Khartoum, Sudan (signed MoU)
- UNESCO C2C RC-IRBM, Regional Centre for Integrated River Basin Management, Kaduna, Nigeria (signed MoU)
- UNESCO C2C RCTWS, Regional Centre for Training and Water Studies of Arid and Semi-Arid Zones, Cairo, Egypt
- UNESCO C2C RCUWM, Regional Centre on Urban Water Management, Tehran, Iran (signed MoU)
- UNESCO C2C ICWRGC, International Centre on Water Resources and adaptation to Global Change, Koblenz, Germany
- UNESCO C2C CAZALAC, Water Centre for Arid and Semi-Arid Zones of Latin America and the Caribbean, Chile

3.3.1 cross-appointment of directors of the category 1 or 2 institutes or centres on the governing board

- Member of WSDAC to serve on governing board of RCWH in Sudan (in process)
- Member of WSDAC to serve on governing board of newly forming UNESCO C2C in Thessaloniki, Greece (in process)
- Member of RCWH in Sudan to serve on governing board of WSDAC (in process)
- Member of RCUWM in Iran to serve on governing board of WSDAC (in process)

3.3.2 exchange of information on activities such as training/educational materials, and funding opportunities

- Participation on TIGER-NET Programme Roundtable organized by European Space Agency (ESA) during the Stockholm Water Week, 04/09/2014, Stockholm, Sweden
- Participation at the 7th UNESCO Global Friend Water Conference, 7-10 October 2014, Montpellier, France
- Participation at the International Expert Symposium "Coping with Droughts: Building a community of practice on drought management tools", 19-21 November 2014, Santiago de Chile, Chile.
- Presentation on International Workshop: "Enhancing resilience against Multi-Hazards through effective mitigation systems and adaptation strategies". 24-27 February, Manila, Philippines.
- Presentation on the International Workshop on "Sustainability Science for Sustainable Development Goals". 5-6 March, Kuala Lumpur, Malaysia
- Participation on the Third UN World Conference on Disaster Risk Reduction, 14-18 March 2015, Sendai, Japan.
- Presentation at the "Fourth Integrated Drought Management Programme Workshop", 21-22 April 2015, Bucharest, Romania.
- Participation on the Asian IDI-G-WADI meeting. 16-19 June, 2015, Teheran, Iran.
- Presentation at the UNESCO International Conference: „Measuring, Modeling and managing of the natural processes related to water flows, social values of the linked ecosystem services“. 21-23 September, Lyon, France.
- Presentation at the Asia Water Cycle Symposium 2016 and ICHARM's 10-year Anniversary, March 1-2, 2016, Tokyo, Japan

3.3.3 exchange of staff, most notably professionals and students
- Member of WSDAC participated in Exchange program organized by United States Mission to UNESCO in collaboration with the Secretariat of UNESCO IHP, titled: "International Visitor Leadership Program: Water Resources Management in the U.S. for UNESCO", June 2015
- RCWH: WSDAC Deputy Director visited the Regional Centre on Capacity Development and Research in Water Harvesting (RCWH) Category 2 centre in Khartoum, Sudan in February 2016. Ideas for future collaboration on problems of water harvesting and climate change were discussed.
- ICHARM: WSDAC Deputy Director visited the International Centre for Water Hazard and Risk Management (ICCHARM) Category 2 centre in Tsukuba, Japan in March 2016. Ideas for future collaboration within the International Flood Initiative (IFI), for which ICHARM is the secretariat, were discussed.

3.3.4 implementation of joint activities, such as workshops, conferences, training programmes, joint projects, field visits, software and data sharing, knowledge exchange and publications

3.4 Relationships with the UNESCO field and regional office whose jurisdiction covers the country of location
- Contact with UNESCO Venice office, with plans to further improve collaboration

3.5 Relationship with the UNESCO National Commission and the IHP National Committee in the country of location and with other organizations of other countries
- Collaboration with IHP National Comittes in SEE region

3.6 Relationship with other UNESCO-related networks, such as UNESCO Clubs, ASPnet, and UNESCO chairs
- Collaboration with UNESCO’s Water Chair at the University of Belgrade, Serbia,
- Collaboration with UNESCO’s Water Chair at the Aristotel University of Thessaloniki, Greece

4. Communication
4.1 Communication and knowledge dissemination activities undertaken in the framework of IHP
- see 6.2 (Knowledge Transfer)

4.2 Policy documents and advice
- Water Policy document for Serbia developed by the Institute/Centre

5. Update on Centre Operations
5.1 Membership of the Board of Governors between designated period
5.2 Key decisions made (attach minutes of meetings)

6. Evidence of the Centre’s Impacts

6.1 Science Impacts (Major contributions to the science, technology, education, and regional and/or international cooperation in the field of water)

− Major contributions in defining groundwater processes in alluvial aquifers
− Defined methodology for estimation of river runoff reduction due to global rising temperatures

6.2 Knowledge Transfer Impacts (Major achievements in the dissemination of knowledge and technology transfer)

Conferences organised by WSDAC:
− Milankovitch Anniversary UNESCO Symposium "Water Management in Transition Countries as Impacted by Climate Change and Other Global Changes, Lessons from Paleoclimate, and Regional Issues", 3-5 September 2014, Belgrade, Serbia
− IWA Specialist Groundwater Conference, 9-11 June 2016, Belgrade, Serbia
− organization of special session, Implementing IWRM Especially for Transition Countries, under the theme 3.4. SMART Implementation of IWRM, on the 7th World Water Forum, Daegu, Korea, in April 2015.
− organization of meeting titled "Launching of South East European G-WADI Network and IDI expert group meeting; Data tools and methodologies to address floods and droughts in the Member States" in Belgrade, Serbia, December 2014

6.3 Policy Impacts (advice sought by government and other bodies and evidence of inputs into policy arena)

− Serbian Water Management Strategy
− Climate Change Communication Strategy
− Danube River Basin Management Plan for the Territory of Serbia
− provided assistance to the Ministry with accession negotiations with the European Commission

7. Future activities that will contribute directly to IHP and/or to WWAP

7.1 Operational Plan (attach if available)

7.2 Strategic Plan linked with IHP-VIII (Appendix 1). Focal areas within IHP-VIII the centre plans to contribute to and specific actions the centre will undertake to align its activities with the strategic plan for IHP-VIII

8. Annexes

8.1 List of publications released by the centre (there can be overlap with those listed in 2.3 above)

− Journal "Water Research and Management", co-published by WSDAC host institution JCI
− Proceedings of the Milankovitch Anniversary UNESCO Symposium "Water Management in Transition Countries as Impacted by Climate Change and Other Global Changes, Lessons from Paleoclimate, and Regional Issues", 3-5 September 2014, Belgrade, Serbia
− Proceedings of IWA Specialist Groundwater Conference, 9-11 June 2016, Belgrade, Serbia (to be published)
− Published papers in international journals:


8.2 List of training courses conducted (there can be overlap with those listed in 2.1 above)
Overview of the Core Programme Themes of the Eighth Phase of the IHP (2014-2021)

WATER SECURITY: ADDRESSING LOCAL, REGIONAL, AND GLOBAL CHALLENGES

THEME 1: WATER-RELATED DISASTERS AND HYDROLOGICAL CHANGE
- Focal area 1.1 - Risk management as adaptation to global changes
- Focal area 1.2 - Understanding coupled human and natural processes
- Focal area 1.3 - Benefiting from global and local Earth observation systems
- Focal area 1.4 - Addressing uncertainty and improving its communication
- Focal area 1.5 - Improve scientific basis for hydrology and water sciences for preparation and response to extreme hydrological events

THEME 2: GROUNDWATER IN A CHANGING ENVIRONMENT
- Focal area 2.1 - Enhancing sustainable groundwater resources management
- Focal area 2.2 - Addressing strategies for management of aquifers recharge
- Focal area 2.3 - Adapting to the impacts of climate change on aquifer systems
- Focal area 2.4 - Promoting groundwater quality protection
- Focal area 2.5 - Promoting management of transboundary aquifers

THEME 3: ADDRESSING WATER SCARCITY AND QUALITY
- Focal area 3.1 - Improving governance, planning, management, allocation, and efficient use of water resources
- Focal area 3.2 - Dealing with present water scarcity and developing foresight to prevent undesirable trends
- Focal area 3.3 - Promoting tools for stakeholders involvement and awareness and conflict resolution
- Focal area 3.4 - Addressing water quality and pollution issues within an IWRM framework - improving legal, policy, institutional, and human capacity
- Focal area 3.5 - Promoting innovative tools for safety of water supplies and controlling pollution

THEME 4: WATER AND HUMAN SETTLEMENTS OF THE FUTURE
- Focal area 4.1 - Game changing approaches and technologies
- Focal area 4.2 - System wide changes for integrated management approaches
- Focal area 4.3 - Institution and leadership for beneficiation and integration
- Focal area 4.4 - Opportunities in emerging cities in developing countries
- Focal area 4.5 - Integrated development in rural human settlement

THEME 5: ECOHYDROLOGY, ENGINEERING HARMONY FOR A SUSTAINABLE WORLD
- Focal area 5.1 - Hydrological dimension of a catchment – identification of potential threats and opportunities for a sustainable development
- Focal area 5.2 - Shaping of the catchment ecological structure for ecosystem potential enhancement – biological productivity and biodiversity
- Focal area 5.3 - Ecohydrology system solution and ecological engineering for the enhancement of water and ecosystem resilience and ecosystem services
- Focal area 5.4 - Urban Ecohydrology – storm water purification and retention in the city landscape, potential for improvement of health and quality of life
- Focal area 5.5 - Ecohydrological regulation for sustaining and restoring continental to coastal connectivity and ecosystem functioning

THEME 6: WATER EDUCATION, KEY FOR WATER SECURITY
- Focal area 6.1 - Enhancing tertiary water education and professional capabilities in the water sector
- Focal area 6.2 - Addressing vocational education and training of water technicians
- Focal area 6.3 - Water education for children and youth
- Focal area 6.4 - Promoting awareness of water issues through informal water education
- Focal area 6.5 - Education for transboundary water cooperation and governance