

**Appendix 1.** Additional information on case study areas.

**Table A1.1:** Main characteristics of case study areas

Case study area	Oum Zessar Watershed (OZW, Tunisia)	Rwenzori region (RWR, Uganda)	Inner Niger Delta† (IND, Mali)	Upper Thukela (UTH, South Africa)
Population [approx.]	20 000‡	1 400 000§	850 000	715 000¶
Case study area [km <sup>2</sup> ]	350	14 000	40 000	13 000
Approx. elevation range [m.a.s.l.] #	0-700††	900 – over 4000	260-270	500 – over 3000‡‡
First administrative unit of country§§	Medenine	Western region	Ségou, Mopti	KwaZulu-Natal
Second administrative unit of country§§	Beni Khadeche, Medenine Nord, Sidi Makhlouf	Kasese, Kabarole, Bundibugyo	Macina, Mopti, Youwarou, Ténenkou	uThukela
Watershed	Oum Zessar watershed	Upper White Nile basin	Upper Niger basin	Upper Thukela basin
Annual rainfall [mm] in the basin	160-220	900-1600¶¶	200-600##	550-2000†††
Average annual temperature [°C]	19-21‡‡‡	20 – 30§§§	28-30	17¶¶¶
Main land cover [%]	Natural shrubs (46) Agricultural areas (42) ‡‡‡	Agricultural areas (40) Grasslands (22) Tropical high forest not depleted (11) ###	Different grassland types Open water ††††	Grassland (55) Bush land (18) ‡‡‡‡
Main land use	48.6% Arboriculture (mainly olives), Livestock farming	Smallholder farming Cash crops: coffee, tea, cotton	Livestock farming Fishing Farming (rice, bourgou, vegetables)	Subsistence agriculture (0.5 to 3 ha) (5.6%); Commercial (200-2000 ha, 7.5%)

	(43.5% are rangelands) ‡‡‡	Food crops: maize, beans, matooke§§§§		Livestock farming ¶¶¶¶
<p>† Climate data refer to the entire Inner Niger Delta</p> <p>‡ Last census 2004, National Institute of Statistics, Tunisia: <a href="http://www.ins.nat.tn">http://www.ins.nat.tn</a></p> <p>§ Projected population of the districts Kasese, Kabarole, Bundibugyo for 2010, based on the census of 2002 (UBOS 2010)</p> <p>  Population of the 4 cercles (second administrative unit) to which the case study areas belong, data from the 2009 census of Mali, Institut National de la Statistique du Mali, <a href="http://www.instat.gov.ml">www.instat.gov.ml</a></p> <p>¶ SSA (2009)</p> <p># Elevation map: SRTM 30 arc (USGS/EROS Data center, FAO GeoNetwork, <a href="http://www.fao.org/geonetwork/">http://www.fao.org/geonetwork/</a>)</p> <p>†† Sghaier and Genin (2003), Sghaier and Ouessar (2011)</p> <p>‡‡ DWAf (2004)</p> <p>§§ Food and Agriculture Organization of the United Nations. FAO GEONETWORK. Global Administrative Unit Layers (GAUL) (GeoLayer). (Latest update: 18 Feb 2014) Accessed (19 Nov 2014). URI: <a href="http://data.fao.org/ref/f7e7adb0-88fd-11da-a88f-000d939bc5d8.html?version=1.0">http://data.fao.org/ref/f7e7adb0-88fd-11da-a88f-000d939bc5d8.html?version=1.0</a></p> <p>   Ouessar et al. (2004)</p> <p>¶¶ NEMA (2010a, 2010b)</p> <p>## Up to 2000 mm in the headwaters of the Niger (Quensiére 1994)</p> <p>††† Lynch and Schulze (2007)</p> <p>‡‡‡ Sghaier and Ouessar (2011)</p> <p>§§§ Dependent on elevation, at higher elevations temperatures below 0, (NEMA 2010a) and WATCH ERA 40 data (Weedon et al. 2011)</p> <p>    Quensiére (1994)</p> <p>¶¶¶ Monthly temperatures vary between 11-22°C, in the Drakensberg mountains frost possible (Schulze and Maharaj 2007)</p> <p>### A mean over the three districts Kasese, Kabarole, Bundibugyo, (UBOS 2010)</p> <p>†††† The area of open water and different grassland types strongly depends on the flooded surface area and water depth. Grassland types and open water (water depth): bourgou (3-5m), didéré (2-3m), rice (1-2m), vetiver (0-1m), open water (&gt;5m), more information provided by Zwarts et al. (2005), Zwarts (2012)</p> <p>‡‡‡‡ Based on the land-cover mapping of (Ezemvelo KZN Wildlife 2010), derived by Pilz (2013) for the case study area</p> <p>§§§§ Kasese District Local Government (2009), NEMA (2010a, 2010b)</p> <p>     E.g. Zwarts and Kone (2005)</p> <p>¶¶¶¶ Malinga et al. (2013)</p>				

**Box A1.1:** Description of climate input data used in scenario assessments

For the reference periods in three of the case studies (OZW, IND, UTH) WATCH ERA40 forcing data were used (Weedon et al. 2011).

*Inner Niger Delta, Mali (IND)*

Climate change impacts were addressed using climate change projections of four Earth System Models (HadGEM2-ES, IPSL-CM5A-LR, GFDL-ESM2M, NorESM1-M) of the CMIP5 (Taylor et al. 2012) which were bias-corrected within the ISI-MIP project (Hempel et al. 2013). A low-end and high-end emission pathway (RCP 2.6 and 8.5) were considered.

*Oum Zessar Watershed, Tunisia (OZW) and uThukela, South Africa (UTH)*

A low-end and high-end emission pathway (RCP 2.6 and 8.5) of the five Earth System Models HadGEM2-ES, IPSL-CM5A-LR, MIROC-ESM-CHEM, GFDL-ESM2M, and NorESM1-M of the CMIP5 (Taylor et al. 2012) were used for the reference and future period. They were bias-corrected within the ISI-MIP project (Hempel et al. 2013).

## Details about the workshops on scenario assessments in the case studies

*Oum Zessar watershed, Tunisia*

**Table A1.2:** Overview of the workshops undertaken in the Oum Zessar watershed organised by the Institut des Régions Arides, Observatoire du Sahara et du Sahel and Potsdam Institute for Climate Impact Research

Workshop number	1	2	3	4
Duration (in days)	2.5	0.5	2.5	1
Workshop content	Development of concept map Driver analysis Scenario logics	Scenario logics Ranking	Fleshing out scenarios Scenario implications	Dissemination of scenario products
Total number of participants	17	17	18	17
Epistemic communities (research institutes and offices)	11	8	8	8
Policy communities (national and regional policy makers, donors)	5	9	6	7 (2 national policy makers)
Networks (farmers organizations, the private sector)	0	0	0	0
Advocacy coalitions (e.g. NGOs)	1	0	4	2

*Rwenzori region, Uganda*

**Table A1.3:** Overview of the workshops undertaken in the Rwenzori region organised by Mountains of the Moon University

Workshop number	1	2	3	4
Duration (in days)	1	2	1	1
Workshop content	Focal issue Driving forces	Analysis of driving forces and interactions	Development of concept map	Storylines
Total number of participants	24	6	6	15
Epistemic communities (research institutes and offices)	2	6	6	10
Policy communities (national and regional policy makers, donors)	6	0	0	0
Networks (farmers organizations, the private sector)	4	0	0	1
Advocacy coalitions (e.g. NGOs)	12	0	0	4

*Inner Niger Delta, Mali*

**Table A1.4:** Overview of the workshop undertaken for the Inner Niger Delta organised by Wetlands International

Workshop number	1
Duration (in days)	1
Workshop content	Define and agree on irrigation scenarios (in ha for each irrigation schemes), on dam combinations and the efficiency settings for Office du Niger
Total number of participants	31
Epistemic communities (research institutes and offices)	4
Policy communities (national and regional policy makers, donors)	4 national 8 regional 4 local
Networks (farmers organizations, the private sector)	7
Advocacy coalitions (e.g. NGOs)	4

*uThukela, South Africa*

**Table A1.5:** Overview of the workshop undertaken for the uThukela region organised by the Institute of National Resources Association

Workshop number	1
Duration (in days)	2
Workshop content	To develop a common understanding of the status quo and to develop an integrated vision and objectives for INRM in the basin Information on planned project and scenario assessment Participatory analysis of main regional drivers and processes in the frame of INRM
Total number of participants	36
Epistemic communities (research institutes and offices)	6
Policy communities (national and regional policy makers, donors)	20
Networks (farmers organizations, the private sector)	3
Advocacy coalitions (e.g. NGOs)	7

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