Potential Contributions and Products from WP5 for the Scenario Development in the Ferghana valley

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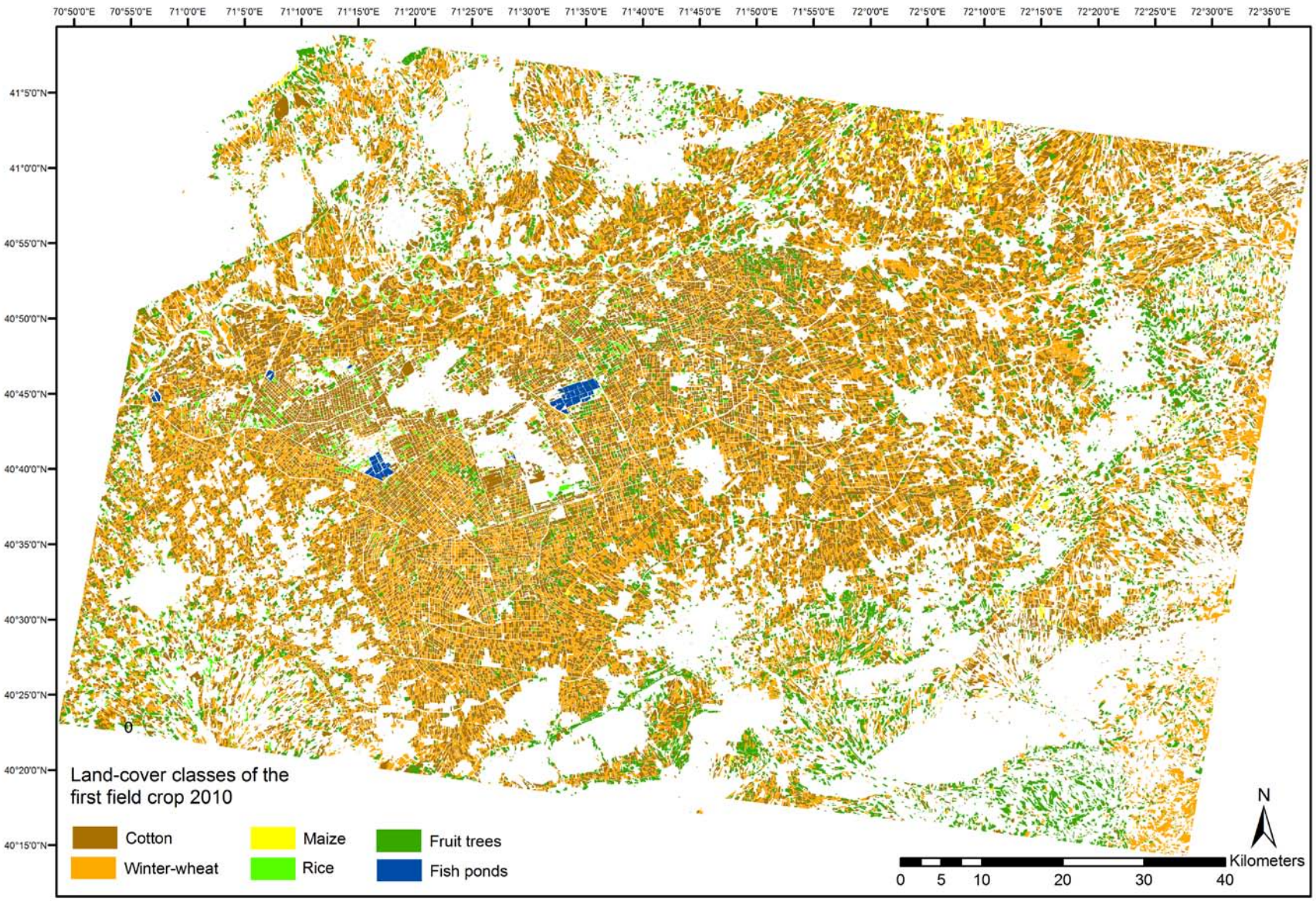
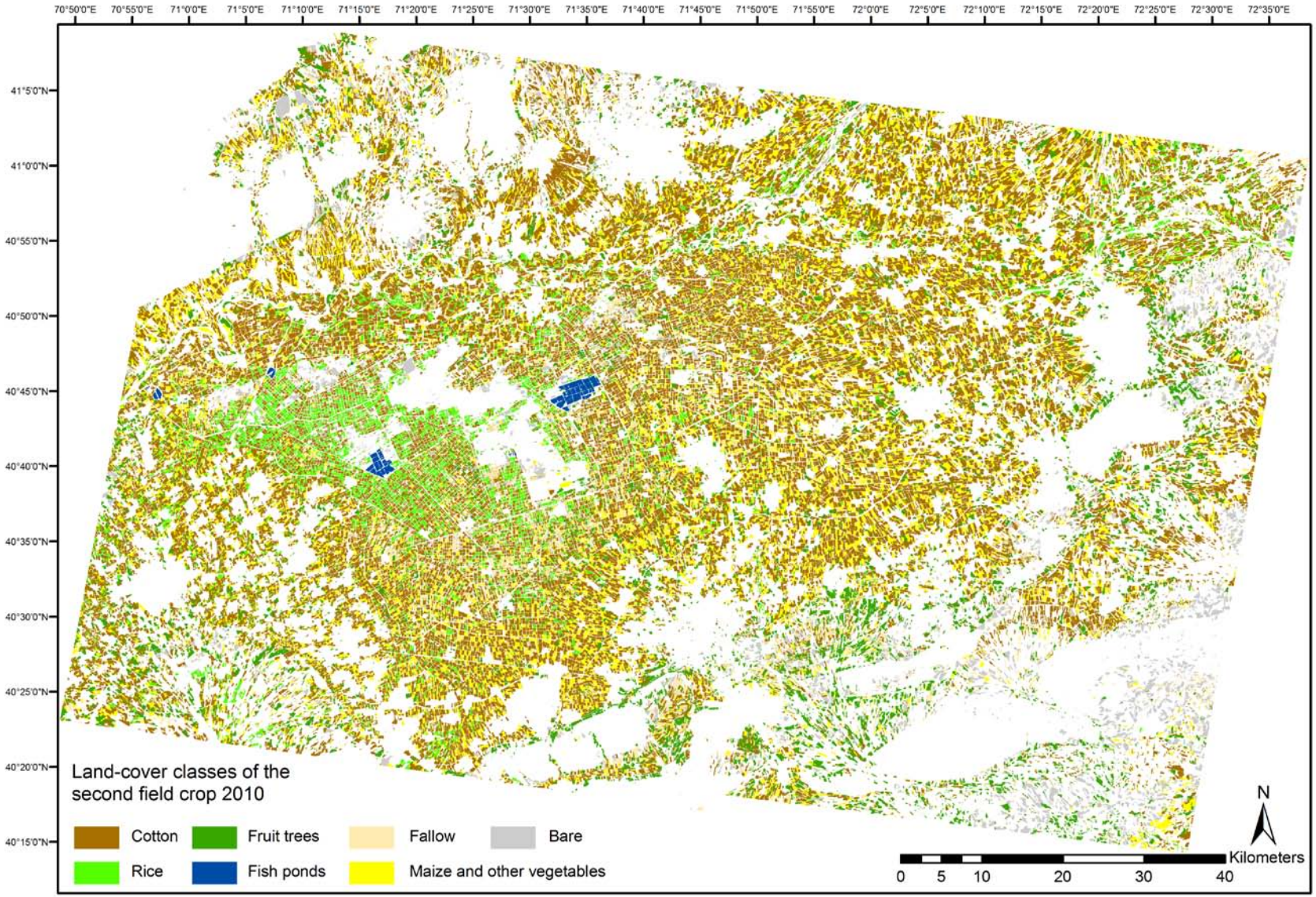
LAND USE MAPS FOR THE FERGHANA VALLEY

Crop classification I



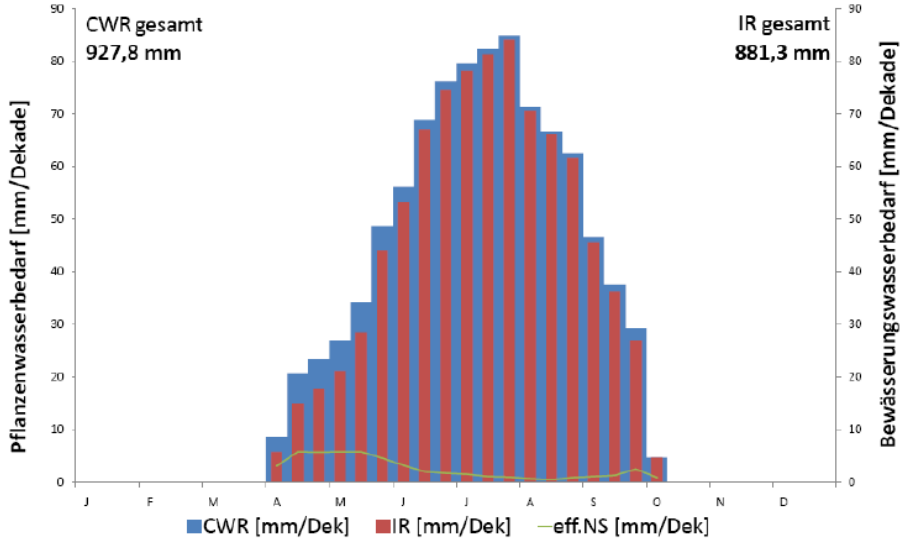
Crop classification II

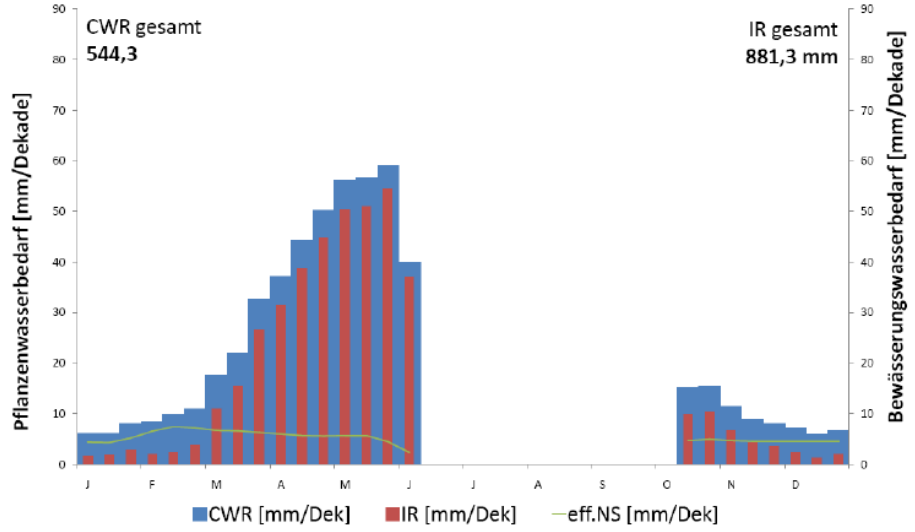


Potential for Scenario Development

Potential use in scenario development:

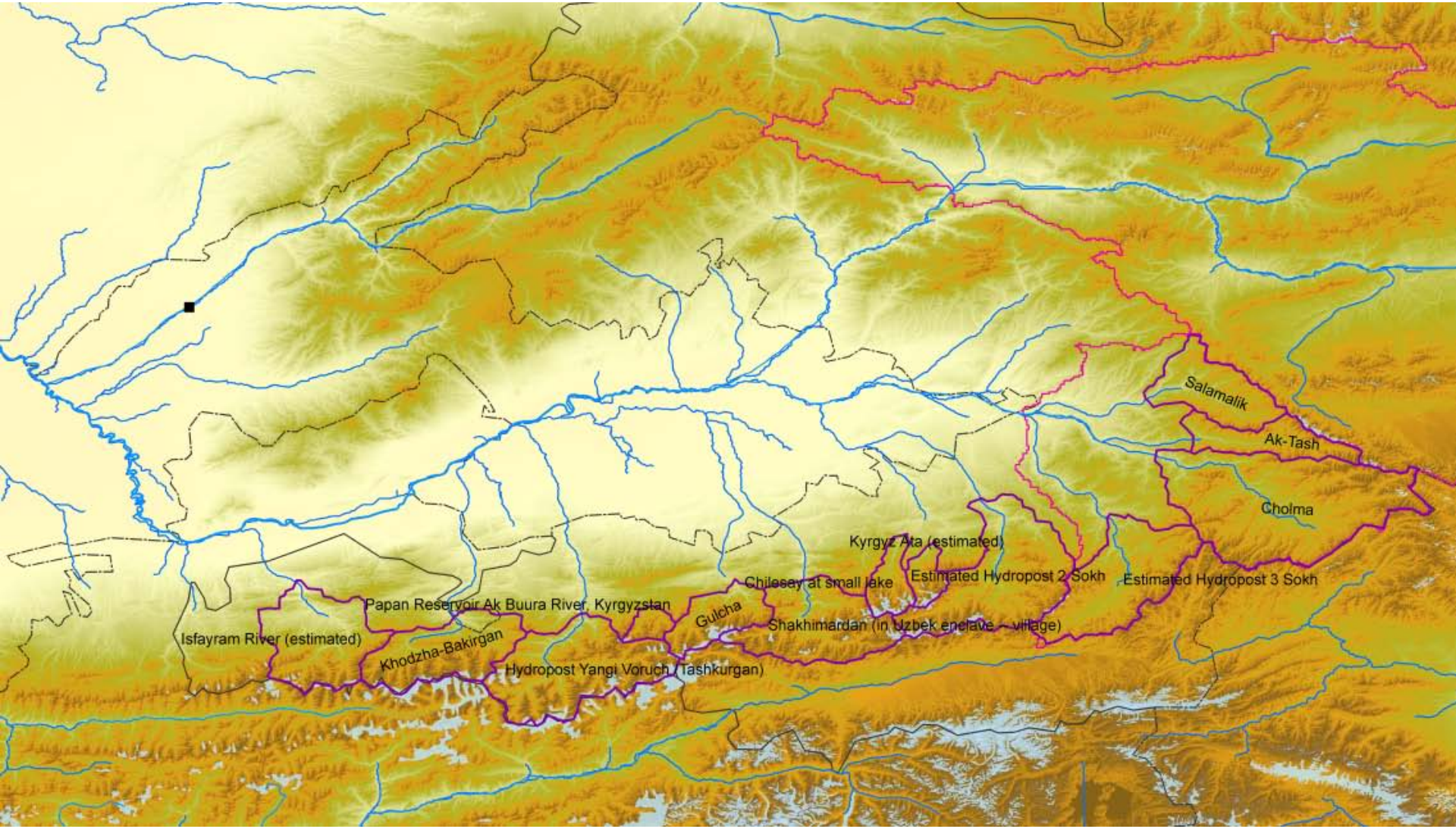
e.g. Estimation of crop water requirements and irrigation requirements at the levels of WUA, irrigation district, or any other





ESTIMATION OF CLIMATE CHANGE IMPACT IN SMALL CATCHMENTS IN THE SOUTHERN FERGHANA VALLEY

Modelled catchments



REMO-WASA model chain, GFZ (WP2)

REMO-GIS model, Wuerzburg University

Simple Approach

Based on REMO results:

- estimation of relative precipitation changes
- estimation of relative evapotransipration changes (Hargreaves * correction factor)
- estimation of daily snow storage based on air temperature

relative changes in river runoff on an annual basis

Limitations:

- no detailed hydrological model involved / no catchment characteristics considered
- no changes in glacierization considered
- no changes in any storage components considered

Runoff changes - Preliminary results

d_runoff	Name	
-8.13	Salamalik	Karadarya river basin *
-5.84	Ak-Tash	
-1.15	Cholma	
1.83	Kyrgyz Ata (estimated)	
11.56	Chilesay at small lake	
-0.09	Papan Reservoir Ak Buura River, Kyrgyzstan	
3.51	Estimated Hydropost 3 Sokh	
0.65	Gulcha	
3.83	Shakhimardan (in Uzbek enclave -- village)	
9.05	Isfayram River (estimated)	
3.66	Khodzha-Bakirgan	
4.27	Hydropost Yangi Voruch (Tashkurgan)	
1.44	Estimated Hydropost 1 Sokh	

Expected annual runoff changes in % in 2031-2050 compared to runoff 1991-2010

** results for the Karadarya sub-catchments might be validated against results from the REMO-WASA model chain (WP2)*