PAWA – Pilot Arno Water Accounts

Final workshop

SEEA-W

System of Environmental-Economic Accounting for Water

From the SEEA-Water tables to the optimization of measures

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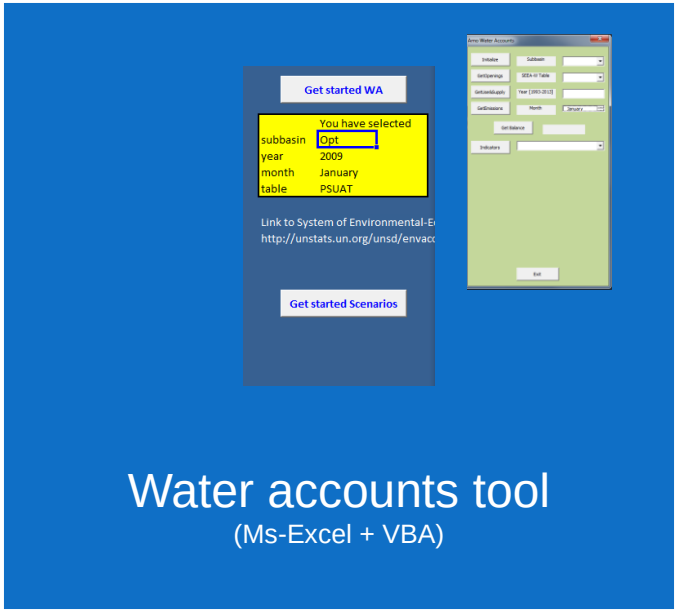
General approach for the optimisation of measures

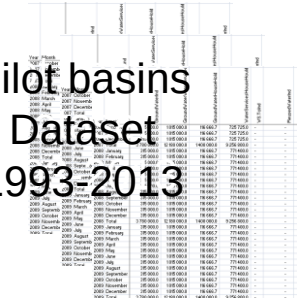
Preliminary steps:

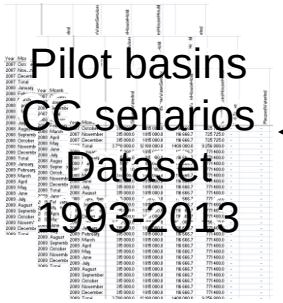
- *Sub-basin where quantitative management measures should be applied*
- *Catalogue or list of potential measures (generic)*

1. Water accounts based analysis on sub-basins
   - identify (or confirm) water stress situations for specific months
2. Selection of measures that could be applied
3. Adaptation of the measures to the local context
4. Use of the selected adapted measures for simulating their impact using the WA-scenario tool
5. Comparison and decision on integration into RBMP

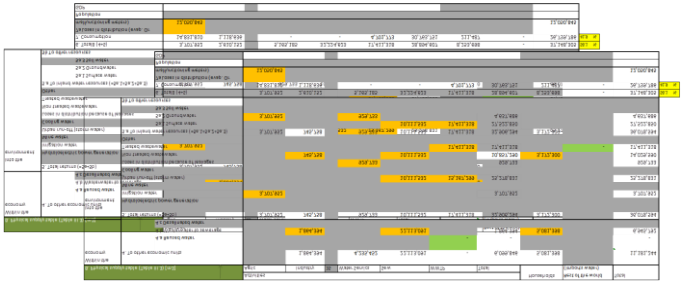
Step 1: WA without measures

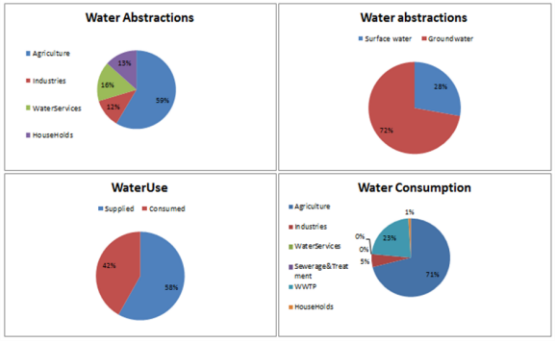



Pilot basins Dataset 1993-2013


Pilot basins CC senarios Dataset 1993-2013

Climate Change simulation





Step 2: WA with measures

Pilot Arno Water Accounts

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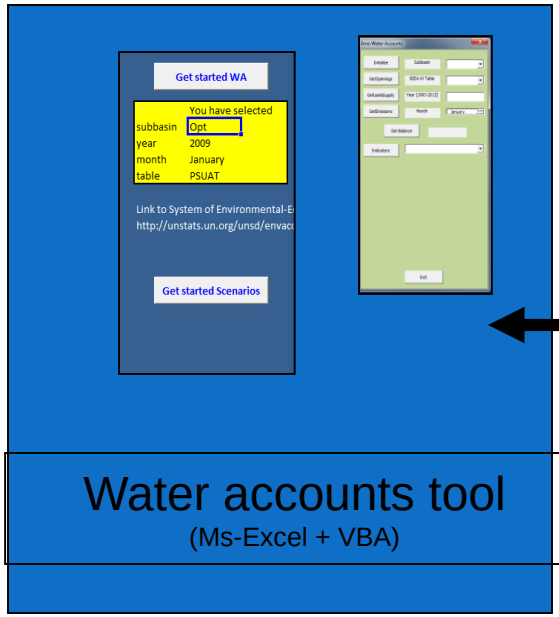
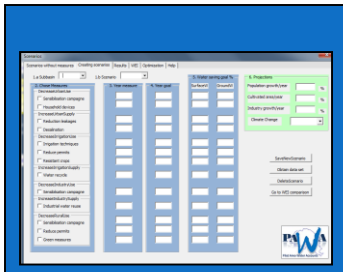


Water accounts tool
(Ms-Excel + VBA)

Revised Dataset 1993-2013

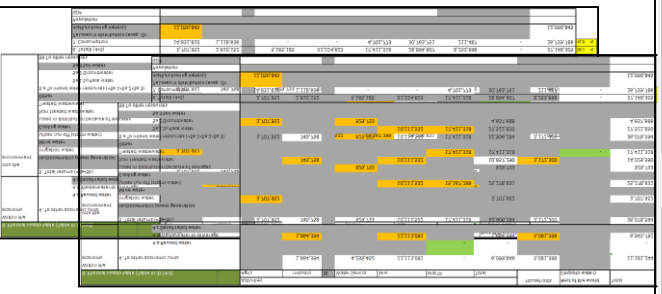


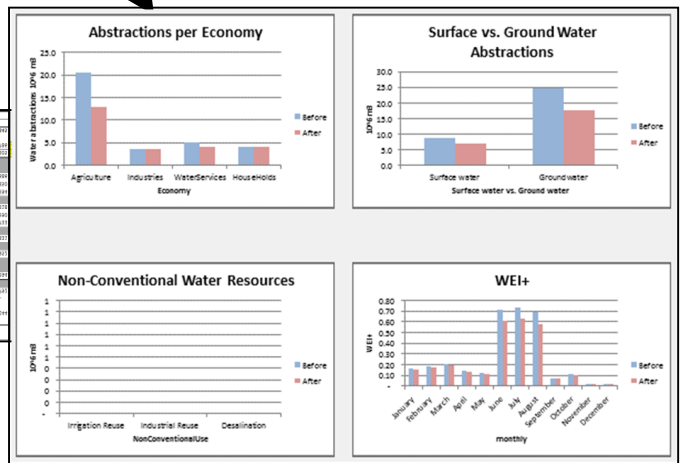
Measures based scenario tool
(Ms-Excel + VBA)

Pilot basins Dataset 1993-2013

Pilot basins CC scenarios Dataset 1993-2013

Catalogue of measures



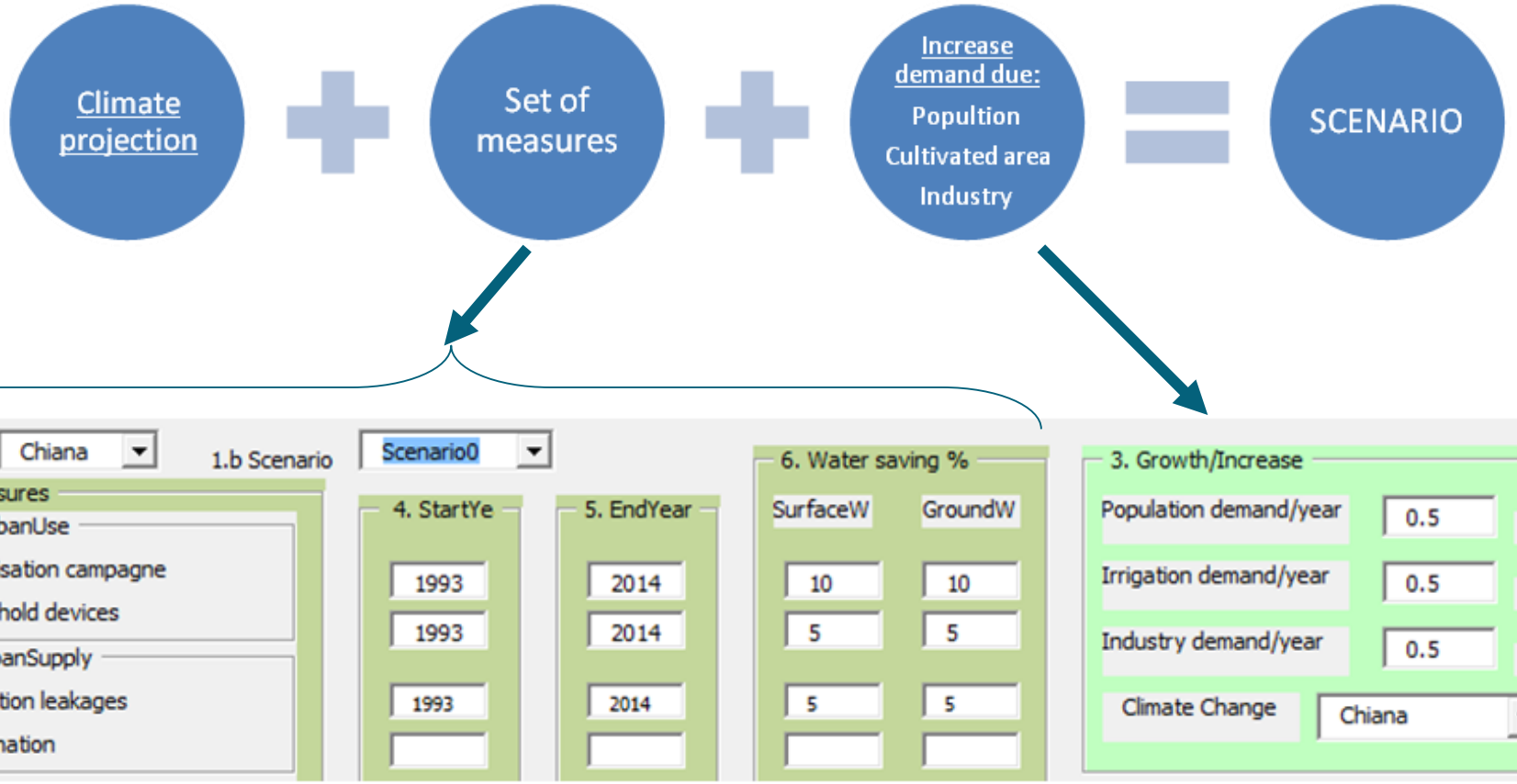


Catalogue of measures

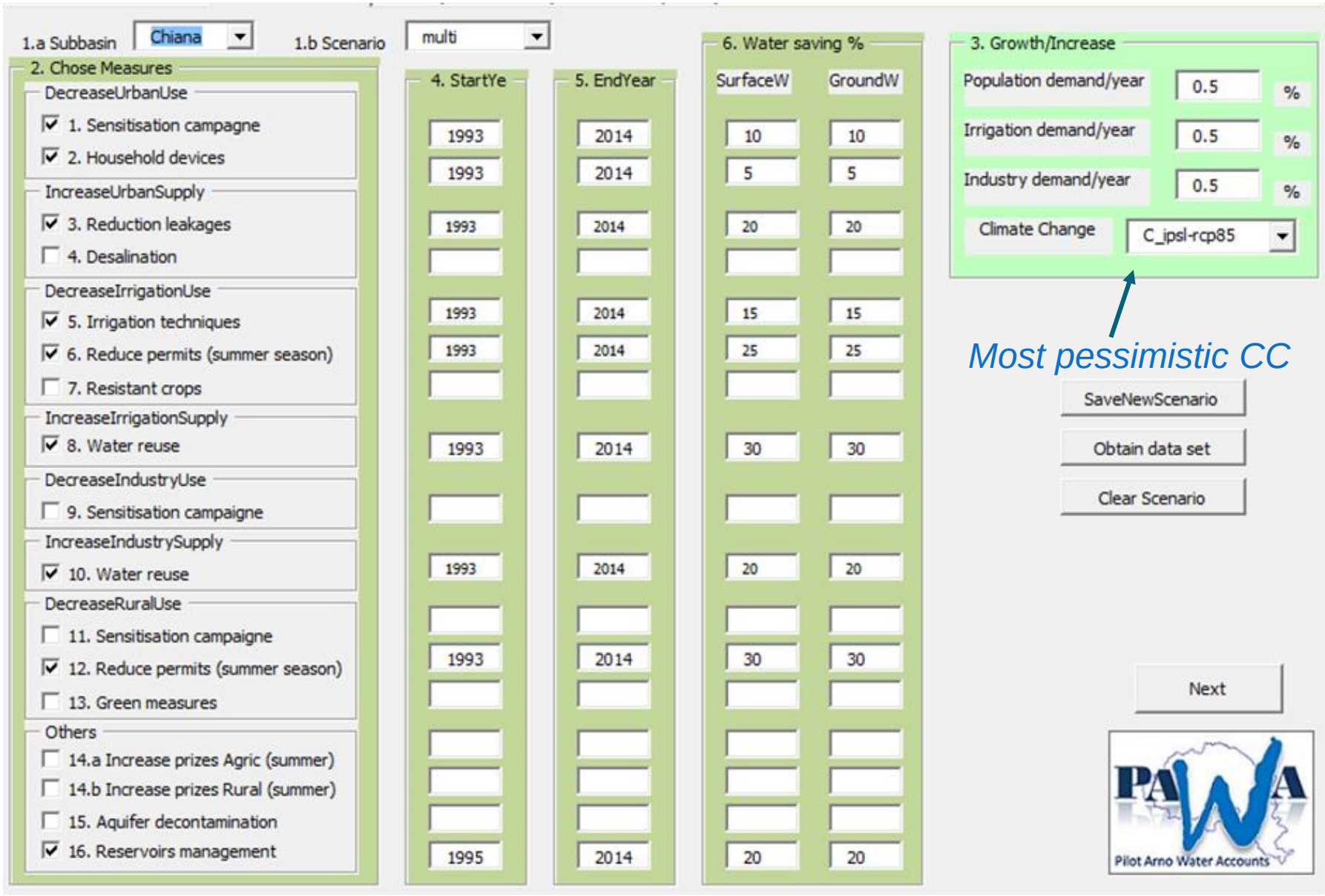
Name of measures	Impacts
1. Sensitization campaign	Water supply services reduce abstractions
2. Household devices	Water supply and HH reduce abstractions
3. Reduction leakages	Water supply reduce abstractions and reduce leakages, water services to households is constant
4. Desalination	Water supply services reduce abstraction
5. Irrigation techniques	Less water abstracted by agriculture
6. Reduce permits (agriculture)	Reduce irrigation abstractions, temporarily
7. Drought resistant crops	Reduce irrigation abstractions
8. Water recycle	Reduce irrigation abstractions
9. Sensitization campaign	Reduce industry abstractions
10. Industrial water reuse	Reduce industry abstractions
11. Sensitization campaign	Reduce rural household abstractions
12. Reduce permits (households)	Reduce rural household abstractions, temporally
13. Green measures	Reduce rural households abstractions
14.a Increase prices irrigation borehole	Irrigation reduce abstractions, temporarily
14.b Increase prices rural borehole	Reduce rural household abstractions, temporarily
15. Rehabilitation aquifers	Increase variable of outflow discharge
16. Reservoirs management	Increase variable of outflow discharge

WA scenarios tool

Creation of scenarios

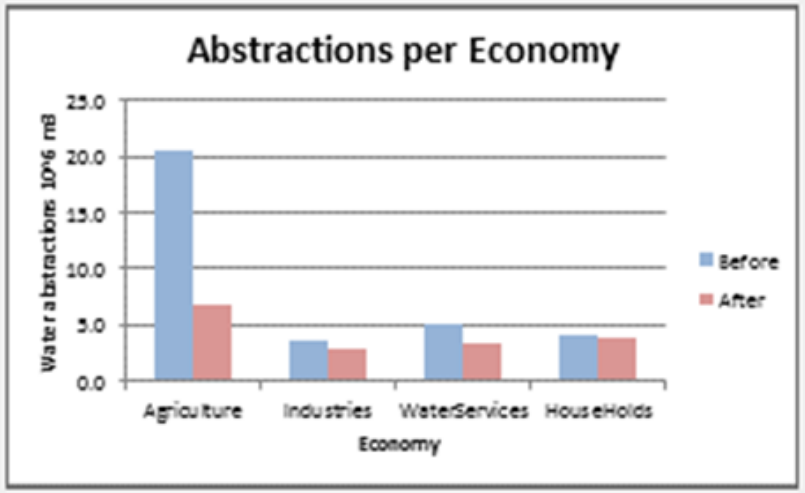


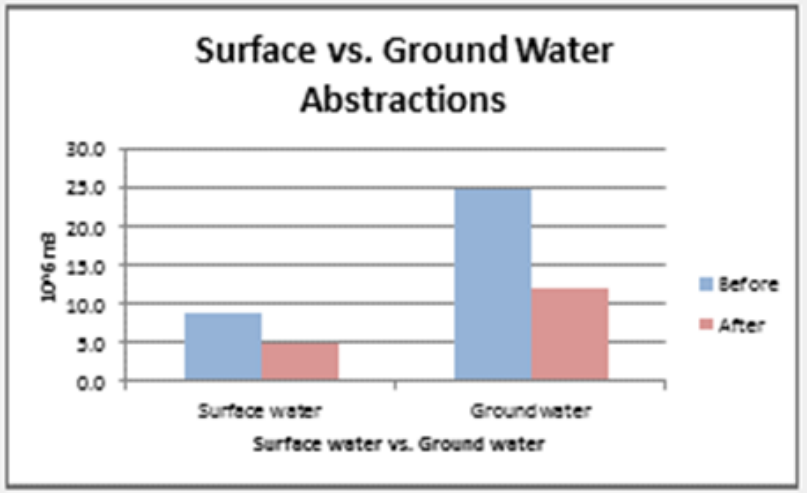
Chiana example: measures applied

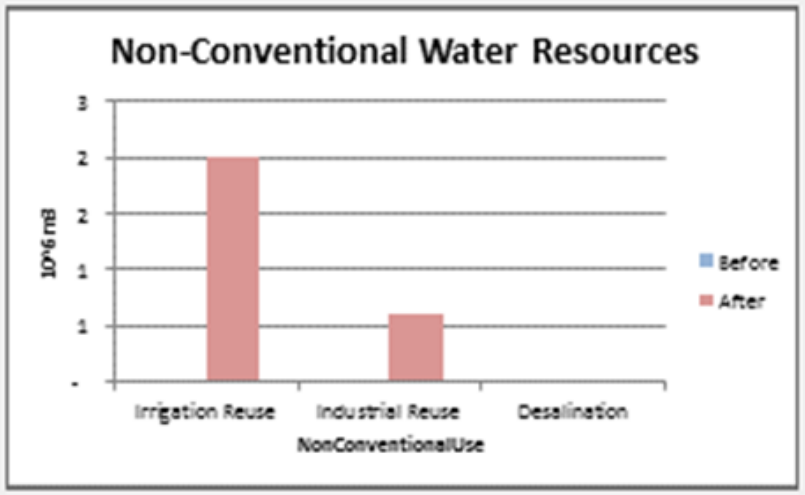


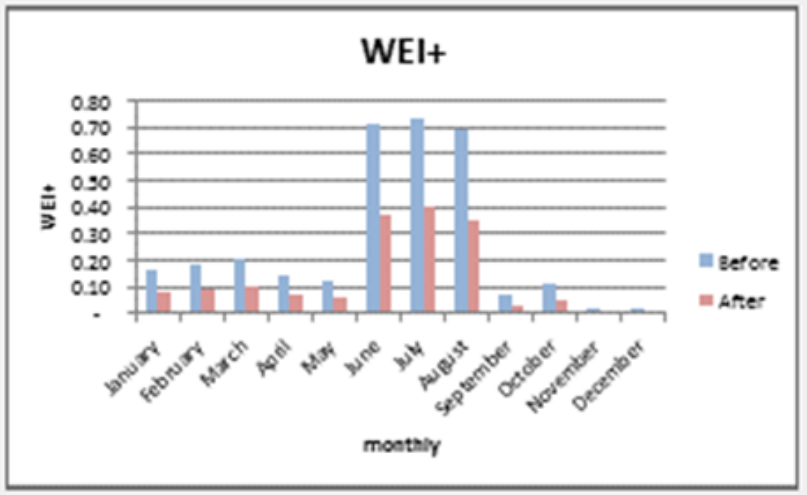
Most pessimistic CC

Chiana example: results









Defining targets

- Iterative simulations using different measures to obtain:
  - Unmet demand = 0
  - WEI+ < 0.4
- Targets defined for the measures

Economy	Water saving targets	Non-conventional use (10^6 m^3)
Irrigation	- 70%	+ 2.01
Water services	- 35%	
Industry	- 20%	+ 0.6
Households	- 30% (summer)	

Thank you for your kind attention!

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