MADFORWATER

Questionnaire for WP6 – Feedback on selected WWT and irrigation strategies

We want to create one strategy per country where municipal wastewater treatment plant (WTTP) effluent could be reused for irrigation. We need your support to provide data to identify the most promising strategies.

Please fill in the questionnaire **as much as possible**, the more the better! The fields to be filled in are marked yellow.

Please answer based in your experience

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
EXAMPLE : *DST-based results* CH1: Reuse of municipal WWTP typical secondary effluent for irrigation of non-food crops Technology suggested: No treatment necessary	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☐ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
DST-based results EGYPT, EG1: Reuse of municipal WWTP typical secondary effluent for irrigation of non-food crops **Technology suggested:** No treatment necessary	☐ Not suitable ☒ Poorly suitable ☐ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state) Health assessment → not additional treatment looks very risky		
DST-based results EGYPT, EG2: Reuse of typical municipal wastewater for agriculture purposes in desert areas **Technology suggested:** Lagooning: Australia I	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state) → High rate of evapotranspiration will increase conductivity of the water, reducing the suitability. Also cost of water (volume).		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
Pilot-based result EGYPT, EG3: Reuse of drainage Canal Water for irrigation **Technology suggested:** MADFORWATER Pilot (Lake Manzala, Egypt) with innovative gated pipe	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☐ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		
Agro-economic model result EGYPT, EG4: Water (re)use in the technology scenario **Technology suggested:** Wastewater with innovative gated pipes and calibrated nozzles	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☐ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state) → very important to garantee the uniformity of the water application in orde to increase productivity. Also reduce water ~~cons~~ requirement (gross volume)		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
DST-based results MORROCO, MO1: Reuse of municipal WWTP typical secondary effluent for irrigation of non-food crops **Technology suggested:** No treatment necessary	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state) → To be considered the risk (health issues related with water users (farmers) and soil (water environmental issues → Nitrogen is key (levels and load) ↓ Irrigation method		
DST-based results MORROCO, MO2: Reuse of typical municipal wastewater for irrigation of crops to be eaten raw. **Technology suggested:** Wetlands: Nicaragua	☐ Not suitable ☒ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☒ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state) → Desinfection is required (and therefore process filter) → Depends if water enter in contact with eatible product, but ~~and~~ also is key to consider the irrigation method		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
Pilot-based result MORROCO, MO4: Reuse of municipal WWTP tertiary effluent for olive trees irrigation **Technology suggested:** MADFORWATER Pilot (Agadir, Morocco) with innovative calibrated nozzles and drip irrigation	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		
Agro-economic model result MORROCO, MO5: Water (re)use in the policy scenario **Technology suggested:** Wastewater with innovative calibrated nozzles	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☒ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☒ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☐ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
DST-based results TUNISIA, TU1: Reuse of municipal WWTP typical secondary effluent for irrigation of non-food crops **Technology suggested:** No treatment necessary	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		
DST-based results TUNISIA, TU2: Reuse of municipal WWTP typical secondary effluent for irrigation (NT 106.03 standard) **Technology suggested:** Wetlands: Nicaragua	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☒ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☐ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
Pilot-based result TUNISIA, TU3: Reuse of municipal WWTP secondary effluent for irrigation **Technology suggested:** MADFORWATER Pilot (Chotrana, Tunisia) with innovative calibrated nozzle, model for irrigation scheduling, and plant growth-promoting bacteria	☐ Not suitable ☐ Poorly suitable ☐ Reasonably suitable ☒ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		
Pilot-based result TUNISIA, TU4: Reuse of textile WW for non-food crops irrigation **Technology suggested:** MADFORWATER Pilot (Gwash, Tunisia) with innovative calibrated nozzle	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☐ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☒ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		

Strategy	1) How do you consider the potential of the following strategies?	2) Which measure do you consider supportive for the selected strategies?
Agro-economic model result TUNISIA, TU5: Water (re)use in the policy scenario 1 Technology suggested: wastewater with innovative calibrated nozzle	☐ Not suitable ☐ Poorly suitable ☒ Reasonably suitable ☐ Highly suitable ☐ No answer	☐ **political** (e.g. policy) ☐ **economic** (e.g. water pricing, subsidies) ☐ **social** (e.g. foster social acceptance) ☒ **water management** (e.g. institutional coordination, regional planning and training for proposed technologies) ☒ **legal** (e.g. increase of legal enforcement, new water quality regulations) ☐ **environmental** (e.g. monitoring and reporting of water quality)
Additional comment? (please state)		

3) Is anything missing in general?

I ~~[illegible]~~

- Reclaimed water should not be considered in any scenario as an additional resource, but as a replacement resource of the current water use

4) What is your country of origin?

☐ Tunisia
☐ Egypt
☐ Morocco
☒ Europe