

WAHARA

Introduction to the project

Erik van den Elsen, Rudi Hessel, Coen Ritsema



Contents

- Introduction – the problem – project objectives
- Project setup: Working Packages, Deliverables and Milestones
- Partners in the project
- Project planning
- Where to start?



Introduction

- **WAHARA**: Water Harvesting for Rainfed Africa: investing in dryland agriculture for growth and resilience
- **5 year project**: from March 1st 2011 – Feb 29th 2016.
- Project budget: **€ 2,6 Million** (€ 2.0 Million from the EU)
- EU project **265570**, **FP7-AFRICA-2010**



Introduction – the problem

Some 'statements' from the project proposal:

- Water productivity in Africa is the lowest in the world
- Africa is the only continent where growth of food production has not kept pace with population growth
- 95% of agricultural production in Africa comes from rainfed areas
- Two key challenges concerning agriculture converge:
 - *how will Africa feed its growing population?*
 - *how will African agriculture cope with climate change?*
- How to improve water security of rural Africans?



Introduction - solutions

...but there are also positive sounds:

- The socio-economic benefits of safe water and adequate sanitation (improved health, livelihood security and poverty reduction) have been estimated at US\$3-4 per US\$ 1 invested, with the highest returns in Africa.
- Water Harvesting presents highly adapted, flexible, easy to understand and implement, low-cost solutions to the productivity, climate adaptation and water security challenges
- These approaches hold great potential to boost economic development and sustain livelihoods in rainfed Africa



Introduction – what is ‘WH’?

■ Definition of WATER HARVESTING (WH):

“The collective term for a wide variety of interventions to use rainfall through collection and storage, either in soil or in manmade dams, tanks or containers bridging dry spells and droughts. “

“The effect is increased retention of water in the landscape, enabling management and use of water for multiple purposes”.



Introduction – project objective and emphasis

- Develop innovative **appropriate WH technologies** for different geographical regions of rainfed Africa
 - Emphasis 1 on WH technology **design**: Design WH technologies that have synergies with existing rainfed farming systems
 - Emphasis 2 on WH technology **impact**: Assess at catchment scale the on-site and downstream impact (environmental services) of WH technologies;
 - Emphasis 3 on WH technology **integration**: Develop criteria for sustainable impact on improving livelihoods with WH technologies under various pressures, considering economic development
 - Emphasis 4 on WH technology **learning and action**: Develop guidelines to facilitate stakeholder, learning and action about WH technologies in different (biophysical and socioeconomic) conditions.

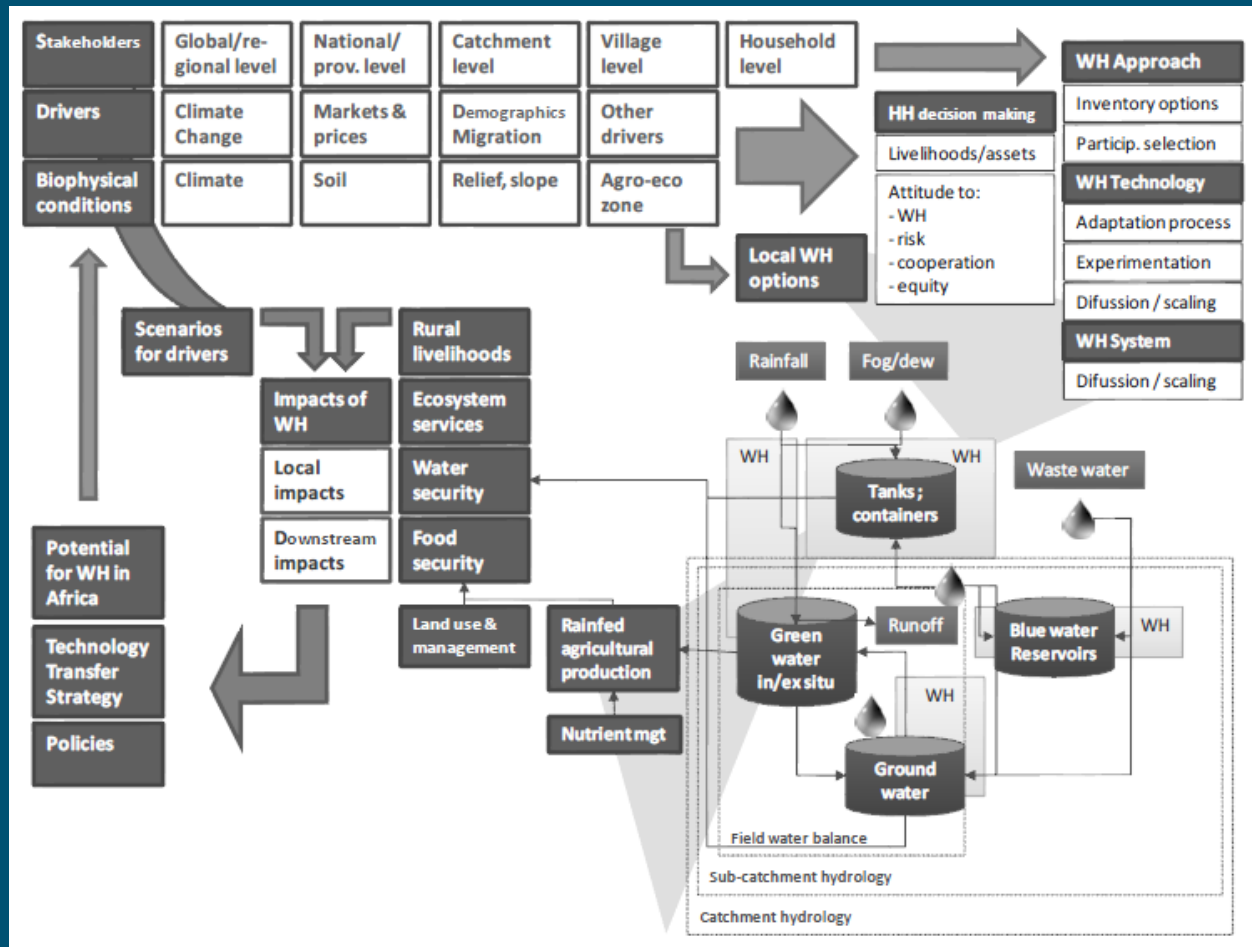
Introduction – project objective and emphasis

The project aims to develop solutions applicable **beyond local study sites** and indeed **across the continent**. In order to reach this objective, study sites are selected that are **representative** for rainfed Africa:

Tunisia in the North,
Burkina Faso in the West,
Zambia in the South and
Ethiopia in the East.



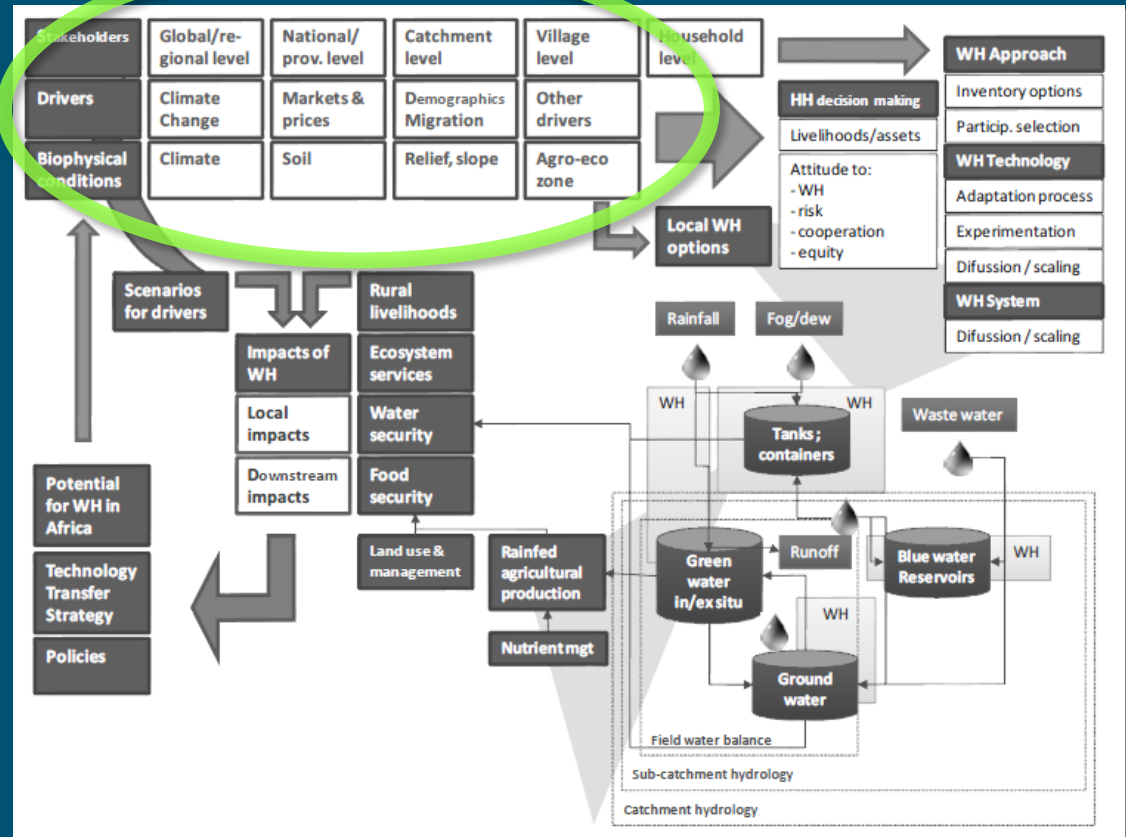
Introduction – conceptual framework



Introduction – conceptual framework

Environment

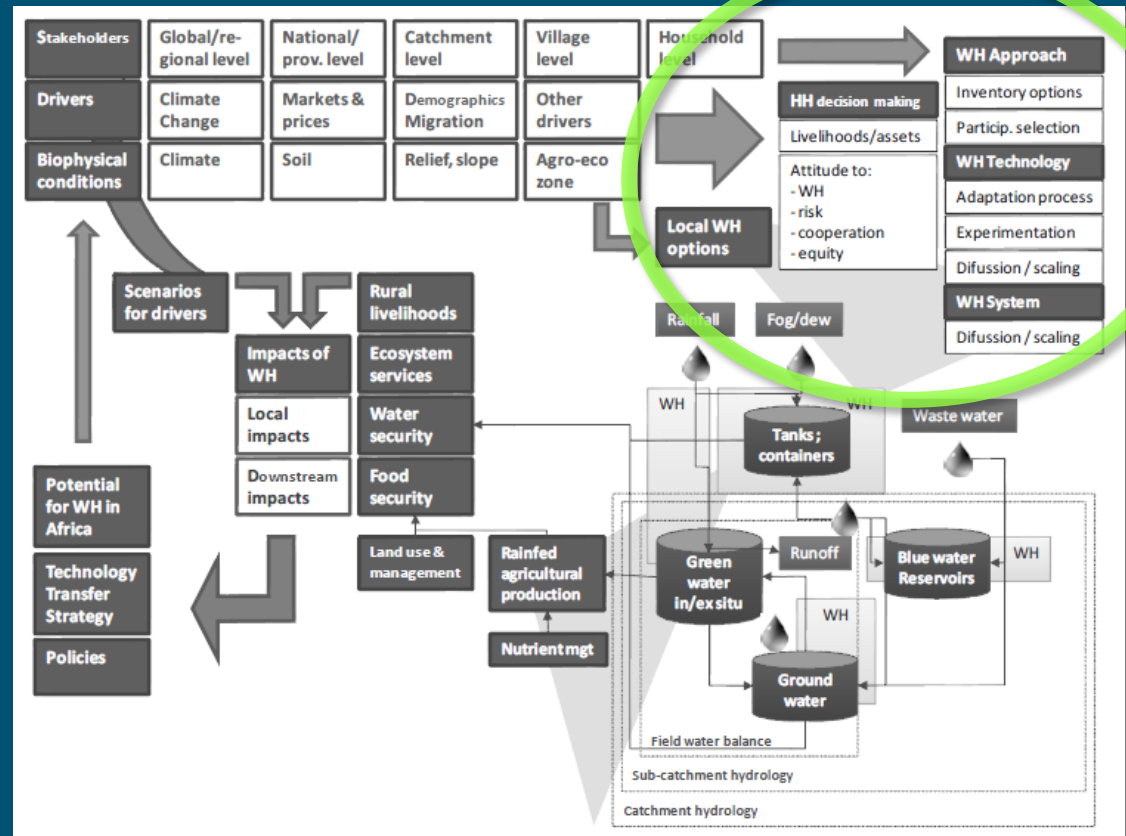
- Biophysical conditions
- Drivers
- Stakeholders



Introduction – conceptual framework

WH possibilities

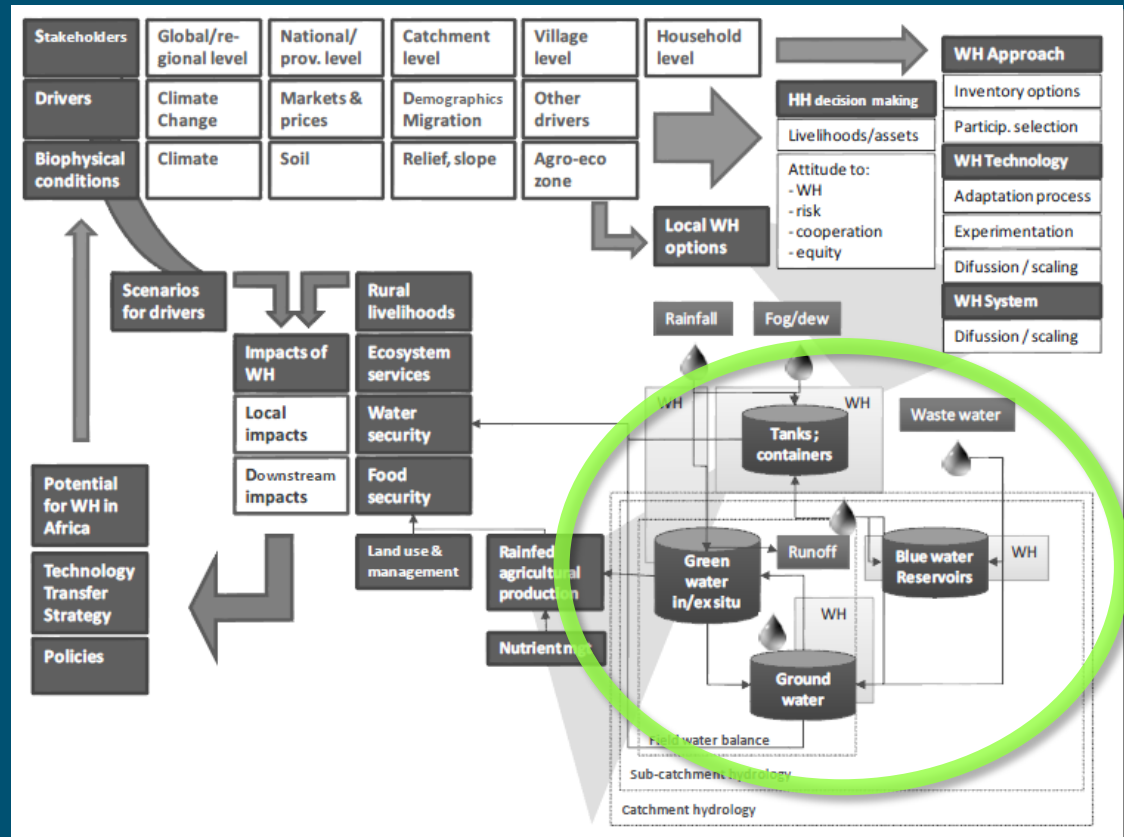
- Approaches
- Technologies
- Attitude / opinions



Introduction – conceptual framework

WH Technologies

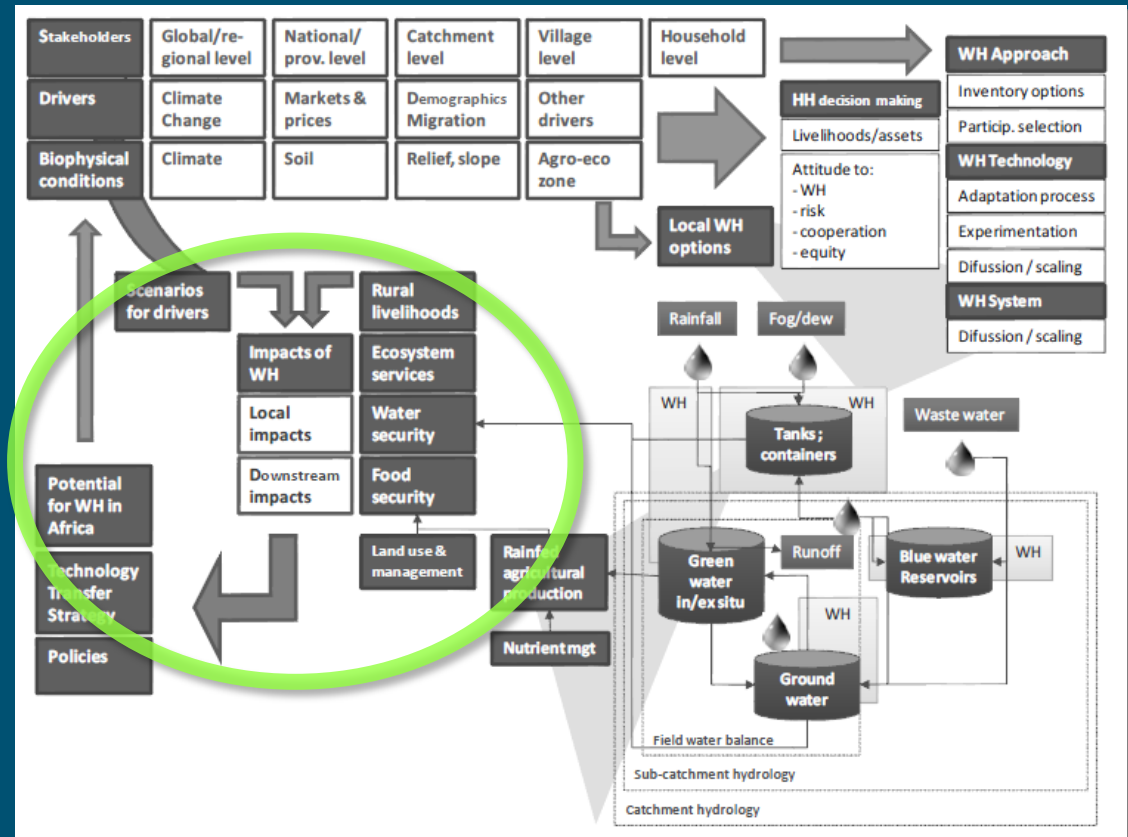
- Available technical options
- Local topography



Introduction – conceptual framework

WH Impacts

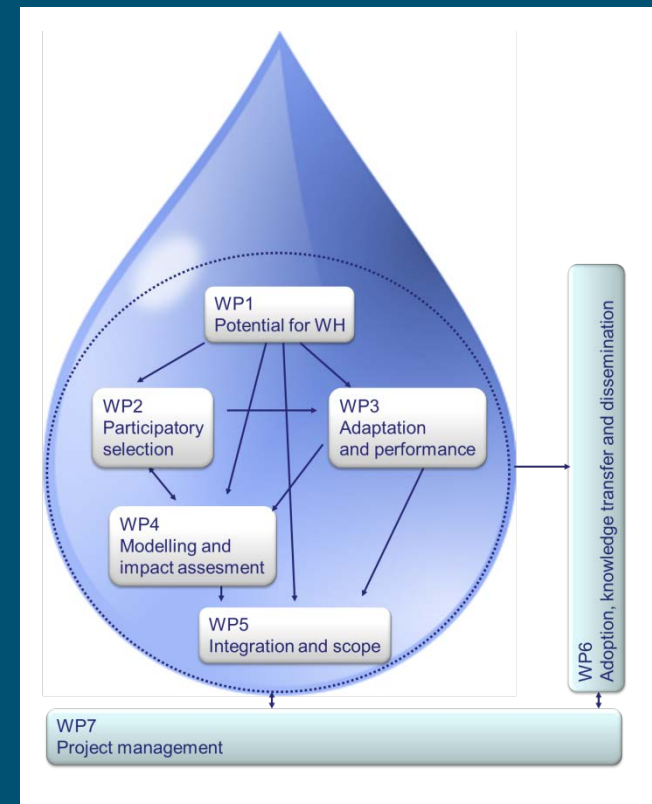
- Livelihoods
- Ecosystem
- Food & water security



Project Setup – Work Packages

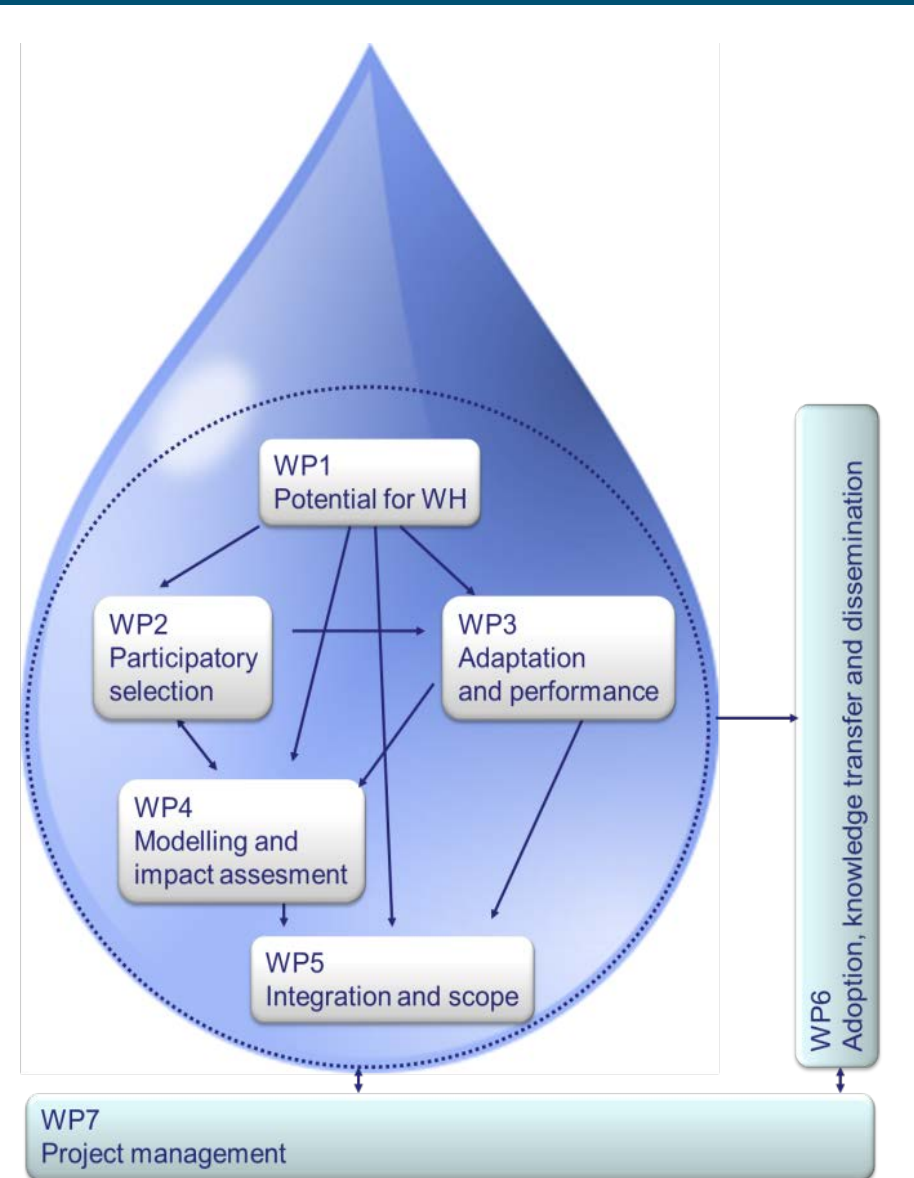
- The work in the project has been thematically divided into Work Packages (WP's) – WP1 ~ WP7
- Every WP has it's own WP leader (leading institute)

Working Package	WP Leader
1 Potential for Water Harvesting	IRA (Tunisia)
2 Participatory selection of technologies	INERA (Burkina Faso)
3 Adaptation and Performance	Mekelle University (Ethiopia)
4 Modelling and impact assessment	University of LEEDS (UK)
5 Integration and Scope	GART (Zambia)
6 Adaptation, knowledge transfer and dissemination	MetaMeta (Netherlands)
7 Project Management	ALTERRA (Netherlands)



Project Setup – Work Packages

- WPs are related to each other
- Different WPs focussing on different scales: 1-4 mostly (not exclusively!) study site level → work repeated for site. WPs 5,6 integration and upscaling, ultimately to continental scale
- Arrows indicate the MAIN relationships between WPs



WP1 Potential for Water Harvesting

- Determines context sites – both biophysical and socio-economic, gathers data → database to be used by other WPs
- Stakeholder analysis, stakeholder workshop (StakW1) → also used to develop stakeholder platforms
- Farm household agro-socio-economic survey
- Continental inventory of WH technologies
- Historical and recent stories of WH, with focus on scaling
- Overall result: assess the local potential for WH (used in other WPs)

WP2 Participatory selection of technologies

- Develop standard format for describing WH technologies, based on WOCAT, with contributions by third parties
- Make a compilation of WH technologies using standard format
- Develop a WH selection methodology, using quick scan tool from WP4 to assess suitability of technologies based on basic agro-ecological and socio-economic characteristics → critical factors implementation technology → applicability limits
- Workshop of African partners to test and refine method, and to exchange information on technologies

WP3 Adaptation and performance

- Adapt the technologies selected in WP2 to make them suitable for local conditions. Use award for best documentation. Use information about continent-wide inventory from WP1
- Develop protocols for performance monitoring
- Implement adapted technologies
- Participatory monitoring for 2-3 years
- Evaluate environmental, social, economic sustainability at different scales

WP4 Modelling and impact assessment

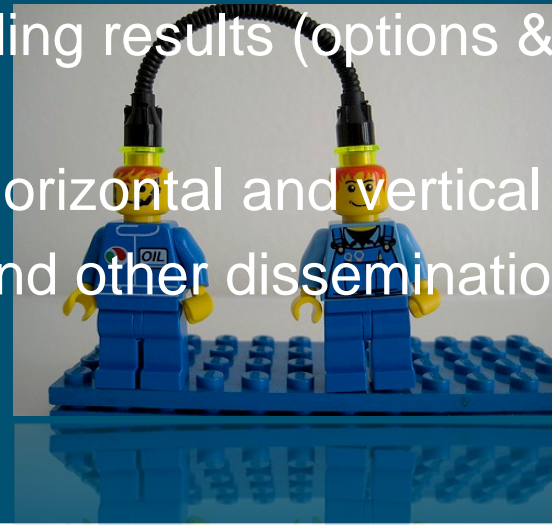
- Develop quick-scan tool for use in WP2
- Adapt PESERA by including routing and channel/floodplain interaction
- Adapt DESMICE to model collective action (needed for WH)
- Develop and run 25-year scenarios for: climate change, population growth, urbanisation, policies and prices
- Determine results at different scales

WP5 Integration and Scope

- Integrated, comparative analysis of the 4 study sites
- Impact WH on production, food (security), water, development and eco-systems. Trade-offs that exist → differences and similarities of the 4 sites
- Analysis of the critical biophysical and socio-economic conditions for WH → scope for application of WH
- Draft guidelines for application, tested by using these in the other 3 sites and evaluated with stakeholders → final version

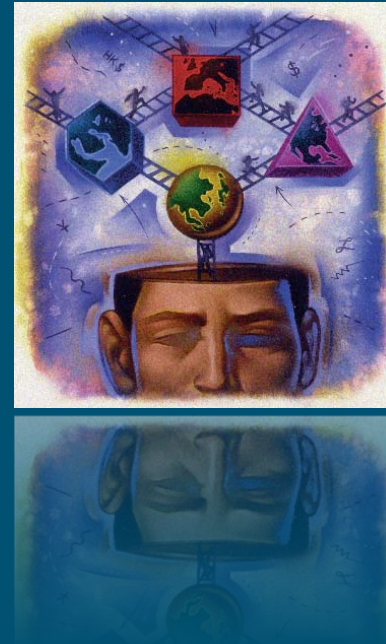
WP6 Adaptation, knowledge transfer and dissemination

- Study approaches for knowledge transfer at different level (spatial, organisational)
- Define indicators for stakeholder learning and action
- Based on review process of monitoring, determine best ways for dissemination
- Determine prospects for spreading results (options & conditions)
- Devise multi-level strategy for horizontal and vertical scaling up
- Dissemination of policy notes and other dissemination materials

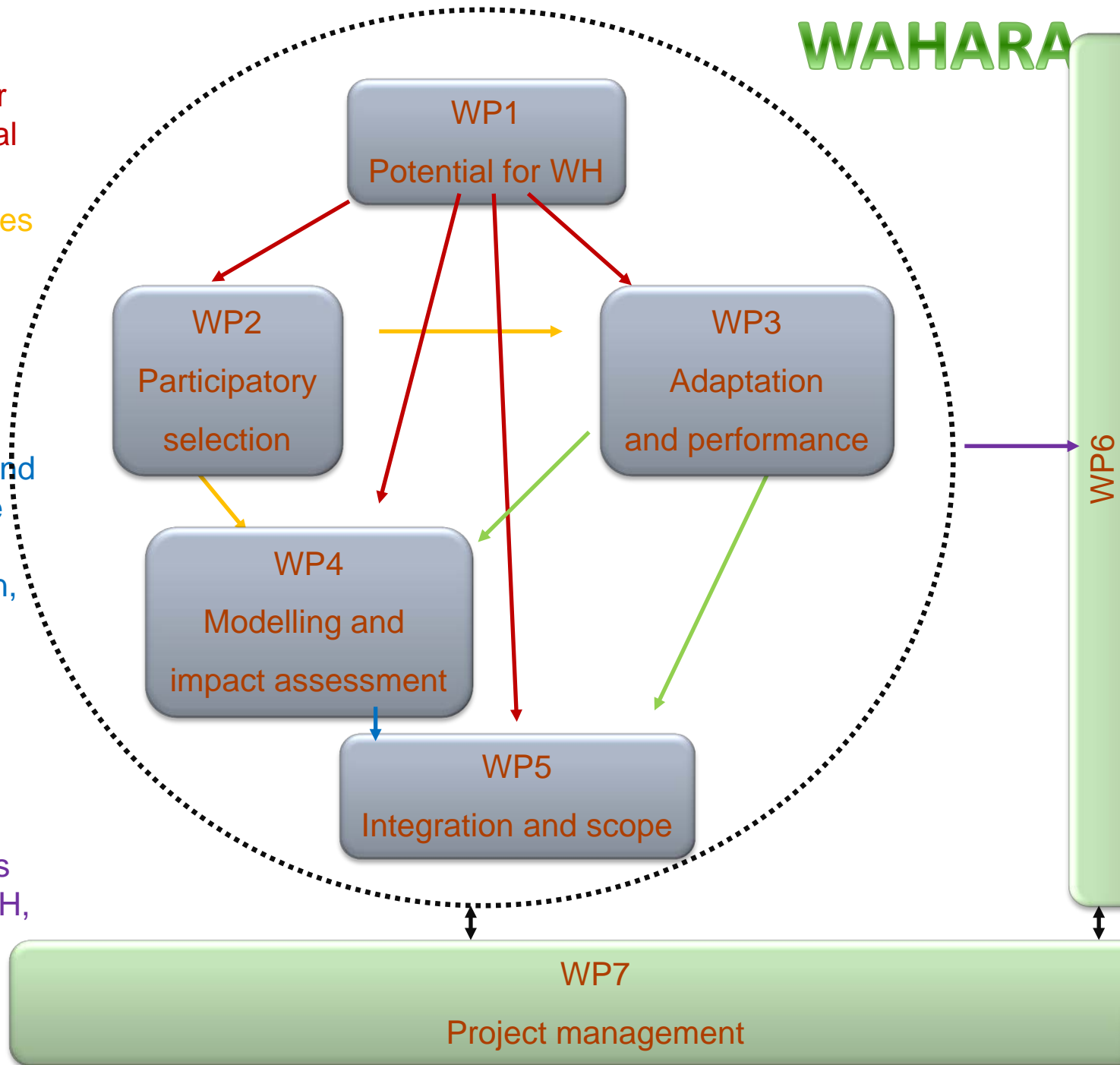


WP7 Management of the consortium

- Management of consortium
- Develop website (del 7.1)
- Develop papers series: Project working paper (intermediate) and Project communication (final results)



- Bio-physical and socio-economic context, stakeholder information, potential for WH
- Selected technologies
- Bio-physical and socio-economic sustainability of technologies
- Model results for current conditions and scenarios of climate change, population growth, urbanisation, policies
- All technical WPs contribute, but main result is outcome WP5: Critical bio-physical and socio-economic conditions for WH, scope of WH, guidelines for application (& adaptation) of WH



Project Setup – Deliverables

Deliverable Number #1	Deliverable Title	WP number #2	Lead beneficiary number	Estimated indicative person-months	Nature #2	Dissemination level #2	Delivery date #4
D1.1	Study site database of spatial and non-spatial data	1	4	20.00	O	RE	12
D1.2	Stakeholder workshop report(W1)	1	4	10.00	R	PU	6
D1.3	Report on WH inventory, history and success stories	1	4	20.00	R	PU	12
D1.4	Report on assessment of the potential of WH	1	4	20.00	R	PU	18
D2.1	Global compilation of WH technologies	2	5	27.00	R	PU	16
D2.2	Replicable participatory WH selection methodology	2	5	15.00	R	PU	16
D2.3	Selection workshop report (W3 &W4)	2	5	15.00	R	PU	18
D2.4	Report on stakeholder choice validation	2	5	28.00	R	PU	30
D3.1	Final report adaptation and performance	3	6	136.00	R	PU	52
D4.1	Continental scale quick assessment tool	4	2	5.00	O	PU	16
D4.2	Integrated model WH impact assessment	4	2	45.00	O	PU	40
D4.3	Scenarios: impact of WH under drivers of change	4	2	34.00	R	PU	56

- The **results** of the work that is divided into Work Packages will be submitted to the EU in the form of pre-defined portions called '**Deliverables**'

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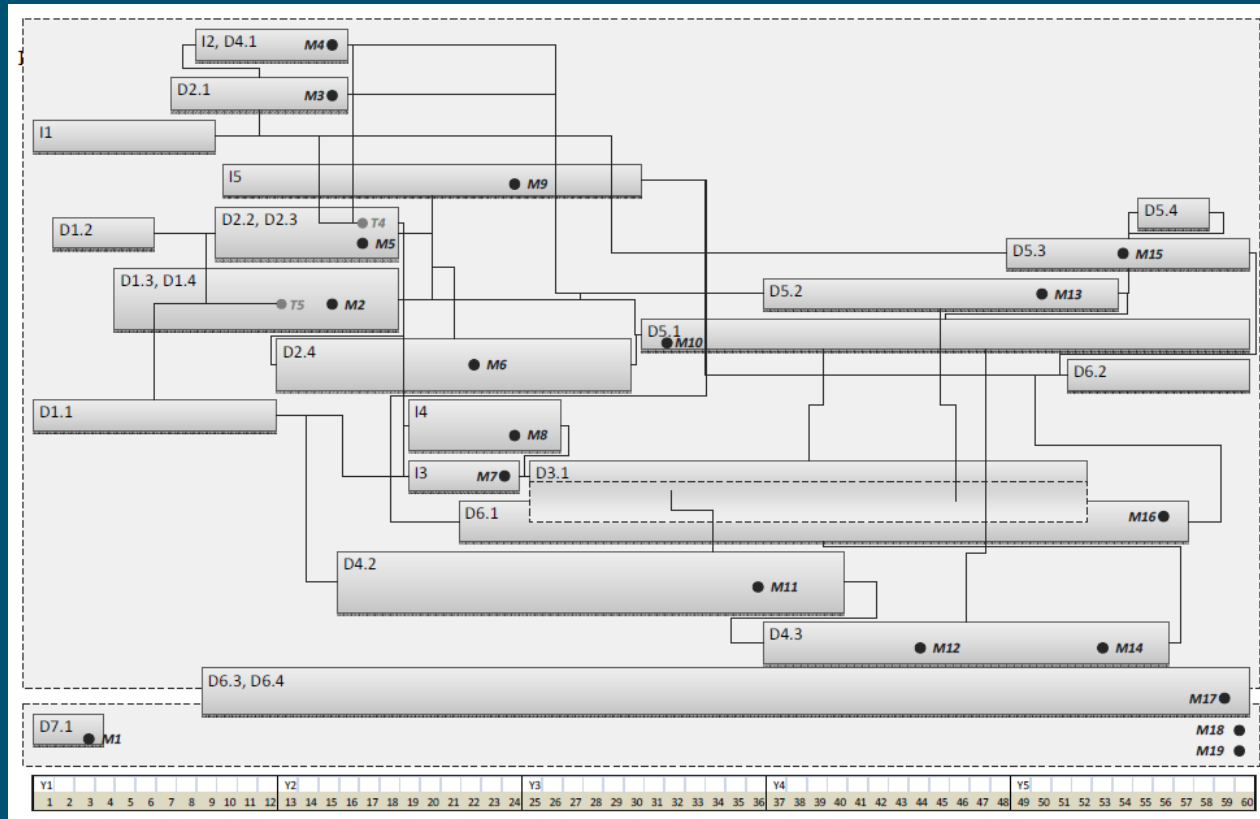
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Project Setup – Milestones



Milestones are important **control points** in the project that announce a **next phase** or ask for a **decision**.

The above Pert Diagram shows the 19 Milestones in the project.

Partners in the project

Partner	
1	ALTERRA (Netherlands)
2	University of LEEDS (UK)
3	MetaMeta (Netherlands)
4	IRA (Tunisia)
5	INERA (Burkina Faso)
6	Mekelle University (Ethiopia)
7	GART (Zambia)
8	Wageningen University (WU) (Netherlands)

Project planning

Year	Y1												Y2												Y3												Y4												Y5															
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60				
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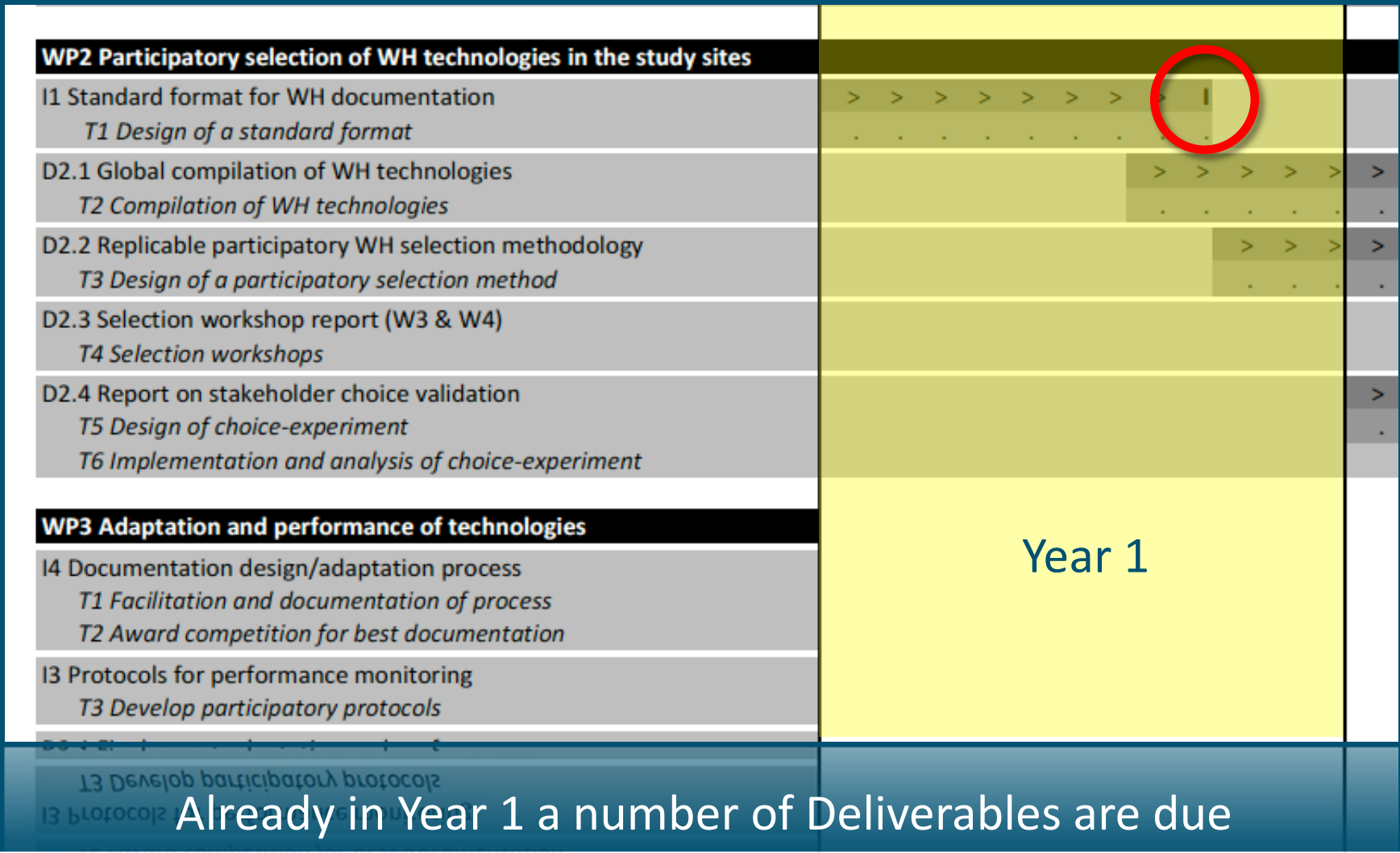
A 5-year (coarse) planning is already made

Project planning

Year	Y1												Y2												Y3												Y4												Y5																
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The Year 1 planning starts in WP1, WP2, WP4 and WP7

Project planning



Already in Year 1 a number of Deliverables are due

Where to Start?

- Discuss about the contents of the project...
- Get acquainted with each other...
- Make a detailed planning for the first 18 months...



...for a good start!

...and a successful
FINISH!

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