

# Water for Bioenergy Crops Production

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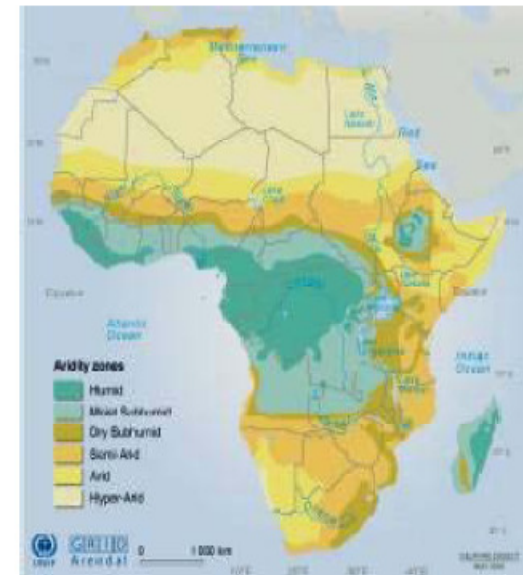
# COMPETE

## Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-Arid Ecosystems - Africa



Duration: January 2007 to December 2009

[www.compete-bioafrica.net](http://www.compete-bioafrica.net)



COMPETE is supported by the European Commission  
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# Good Practice Methodology

- Sustainability assessment framework
- Meetings UNIDO, COMPETE, others
- Interviews policy-makers
- Round tables
- Expert meetings
- Field visits
- Surveys farmers
- Focus groups
- Ethiopia, Burkina Faso, Senegal, Mali, Zambia, Tanzania,
- South Africa, Ghana, Malawi, Botswana, Kenya, Nigeria
- MSc student's work from Africa and Europe

### D 3.4 Sustainability considerations (Good practices)



	<b>Principle</b>	<b>En</b>	<b>S</b>	<b>Ec</b>	<b>P</b>
1.	Good agro-ecological and forestry practices (biodiversity, soil)	✓			
2.	Not affecting water supply and quality	✓			
3.	No land use change that detrimentally affects food security	✓			
4.	Community participation (from planning)		✓		
5.	Women's participation (from planning)		✓		
6.	Skills transfer (management, business, agriculture)		✓		
7.	Community inclusion in business or economic model (Contract with investor or NGO)			✓	
8.	Added value in the community (individual, money, assets, land, co-products)			✓	
9.	Improvement in services and infrastructure (energy supply, health) reinvestment of revenue within the community			✓	
10.	Compliance with National and/or guidelines for bioenergy policy in place				✓
11.	Compliance with Local programmes, regulations and/or plans in place				✓
12.	Respect Land rights and avoid displacement				✓

# Good practices



- India (Ranidhera village, Winrock)
- Mali (Garalo, Mali Folk Centre)
- Zambia (Kabwe Town, Marli Investment Zambia Ltd)
- Tanzania (Arusha, Tatedo)
- Arusha, Diligent
- Tanzania (Kilombero Valley, sugar cane)

Principle	Name	Score
1	Good agro-ecological and forestry practices (biodiversity, soil)	
Comments		
2	Not affecting water supply and quality	
Comments		
3	No land use change that detrimentally affects food security	
Comments		
4	Community participation (from planning)	
Comments		
5	Women's participation (from planning)	
Comments		
6	Skills transfer (management, business, agriculture)	
Comments		
7	Community inclusion in business or economic model (Contract with investor or NGO)	
Comments		
8	Added value in the community	

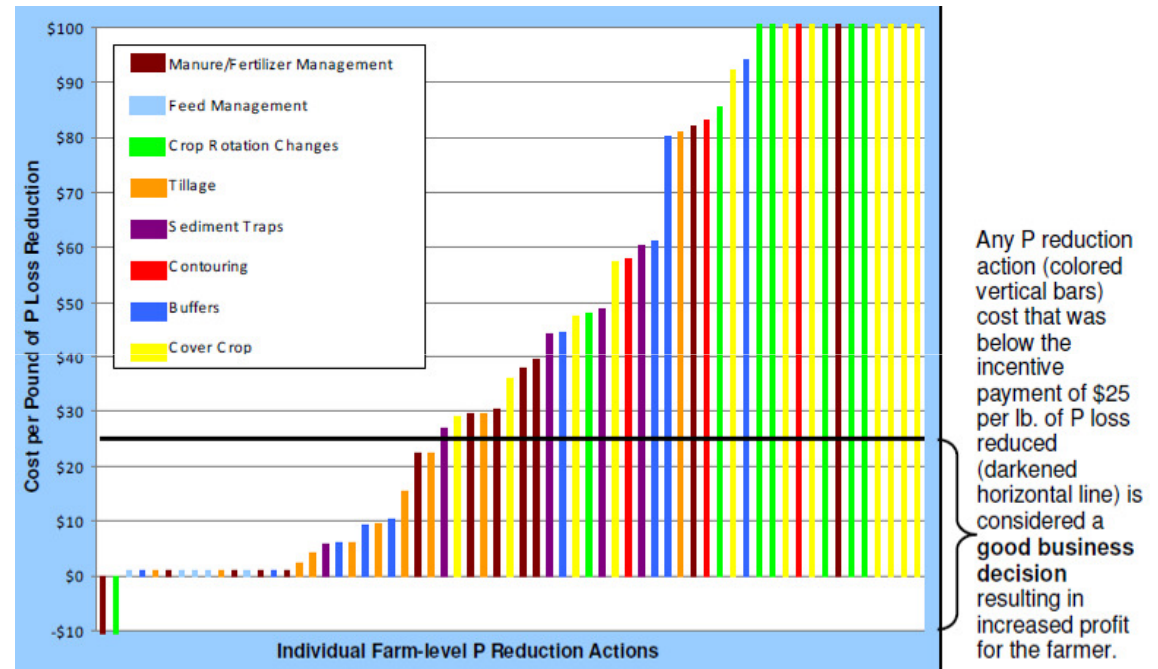
# Water quality

- Natural characteristics
- Pollution
- Organic matter (sugar cane)
- Fertilizers (N, P) water quality and GHG emissions
- Herbicides & Pesticides (soy)

- Nitrogen Use Efficiency (NUE) =
- Difference N taken and N lost
- Management of farms to avoid loss
- USA agricultural nonpoint source pollution  
USA (best management practice and incentives)
- Market –based incentives for water quality and soil erosion avoidance.

# Available measures

- Planting winter cover crops to reduce phosphorus  
US\$800/lb - US\$29/lb depending on site specific contexts
- no-till techniques on specific farms reduce non-point source water pollution and reduce soil erosion



: Winsten & Kerchner, 2009



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# Thank you

**Dr. Rocio Diaz-Chavez**

