Pesticide Risk Reduction Programme – Ethiopia

Discussion on protection goals and scenario zones

6 November 2012

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joint collaborative programme on pesticide registration and post-registration

MoA

ALTERRA

Towards a sustainable use of pesticides in Africa

Protection goals: surface water

- 6 protection goals defined:

1. Rift Valley lakes
2. Temporary ponds/swamp
3. Stream/small rivers
4. River Awash (main river)
5. Storage reservoir (e.g. near Addis)
6. Tributaries of Awash, Blue Nile etc

Protection goals: surface water

- Top 3 protection goals ranked by vulnerability

1. #3. Stream/small rivers
2. #2. Temporary ponds/swamp
3. #1. Rift Valley lakes

most vulnerable

- Water of lakes in Rift Valley used for drinking water, because groundwater is not suitable (fluorite, saline)
- Assumption is that #3 and #2 are more vulnerable because the systems are smaller.

Definition of scenario zones

- One scenario covering the entire country or split the country into scenario zones ?

- Consequences:
  - One scenario, representing ‘realistic worst case’ situation, so scenario will be more strict than average situation (often 90th%-ile):
    if compound fails: NO registration in Ethiopia

  - More scenarios, each ‘realistic worst case’ for scenario zone:
    compound may pass some scenarios and fail some other scenarios:
    registration in some zones and in other zones no registration or e.g. registration with restrictions,
    -> so more flexibility in registration, but more difficult to uphold

Definition of scenario zones

Idea yesterday: more than one scenario zone

- In analogy to efficacy:
  - 2 zones
  - delimited by criterion on elevation
    - 1000 m or 1500 m
    - 1500 m corresponds to agro-ecological zones

Definition of scenario zones

Idea yesterday: more than one scenario zone

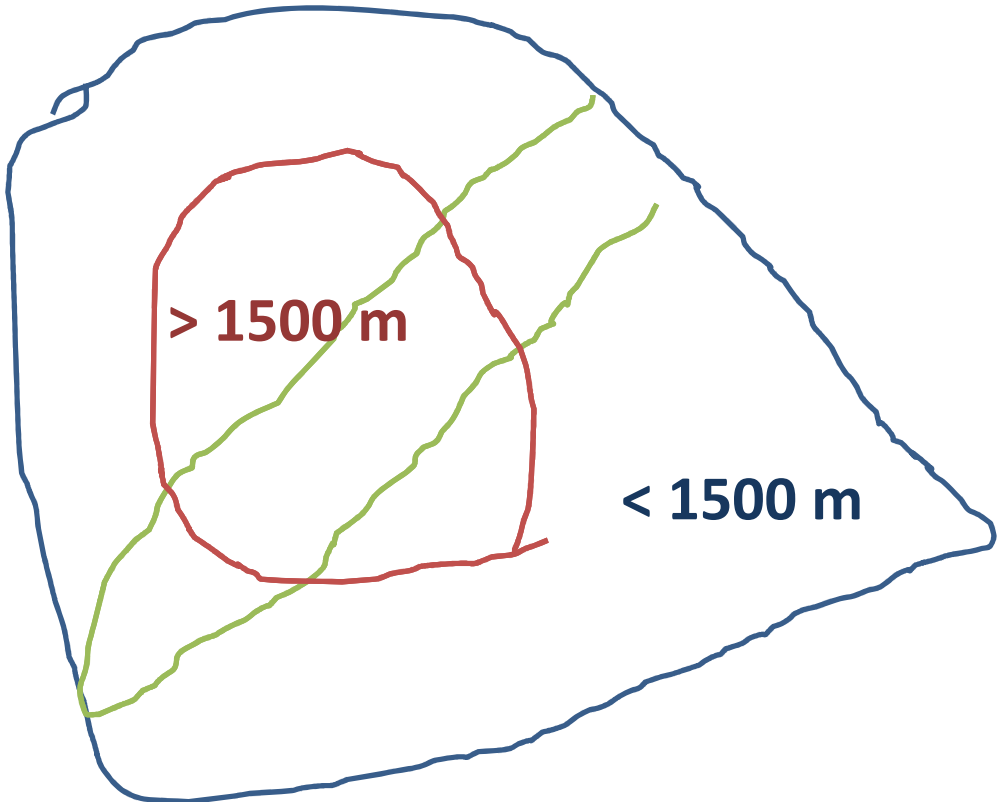
- In analogy to efficacy: 2 zones delimited by elevation

- Other approach: distinguish between
  1. Small holders
  2. Large scale commercial farms (predominantly < 1000 m , but not for cereals and in any part of Ethiopia.)

Definition of scenario zones

2 zones delimited by elevation

- One scenario representing < 1500 m
- One scenario representing > 1500 m



Definition of scenario zones

small holders

Assumptions: spatial distribution:

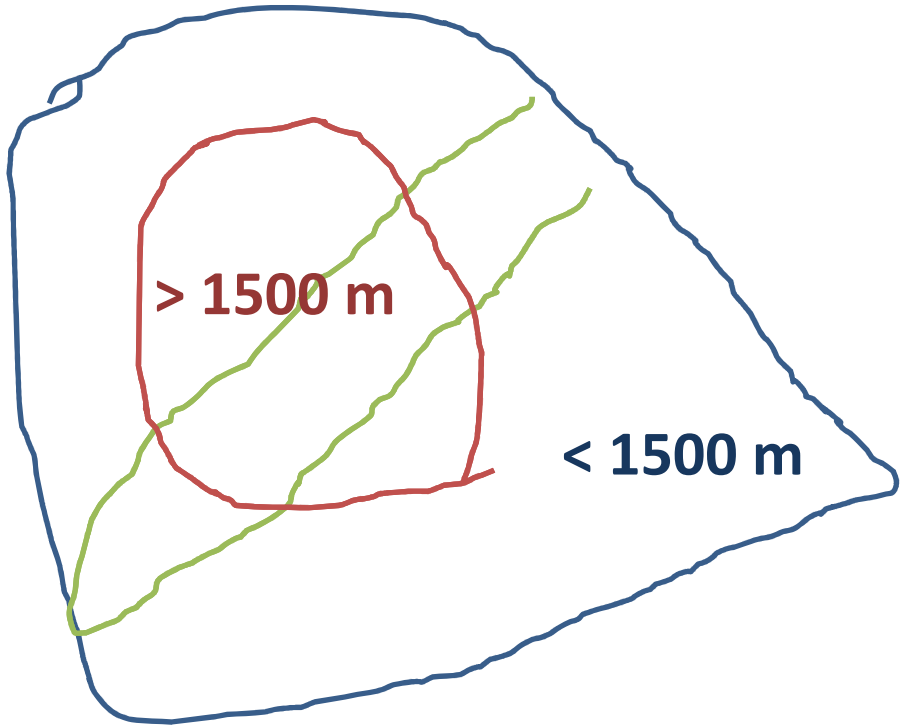
- evenly distributed in area < 1500 m?
- evenly distributed in area > 1500 m?

- Yes? then 2 zones >/<1500m

suitable to evaluate risks

in small holders

Decision: 2 zones >/<1500m



Definition of scenario zones

Large scale commercial farms (LSCF)

Assumptions: spatial distribution:

- LSCF in zone **>** 1500 m – wheat, barley, maize
- evenly distributed in area **<** 1500 m?
- Yes? then < 1500m suitable to evaluate risks
- → No? then

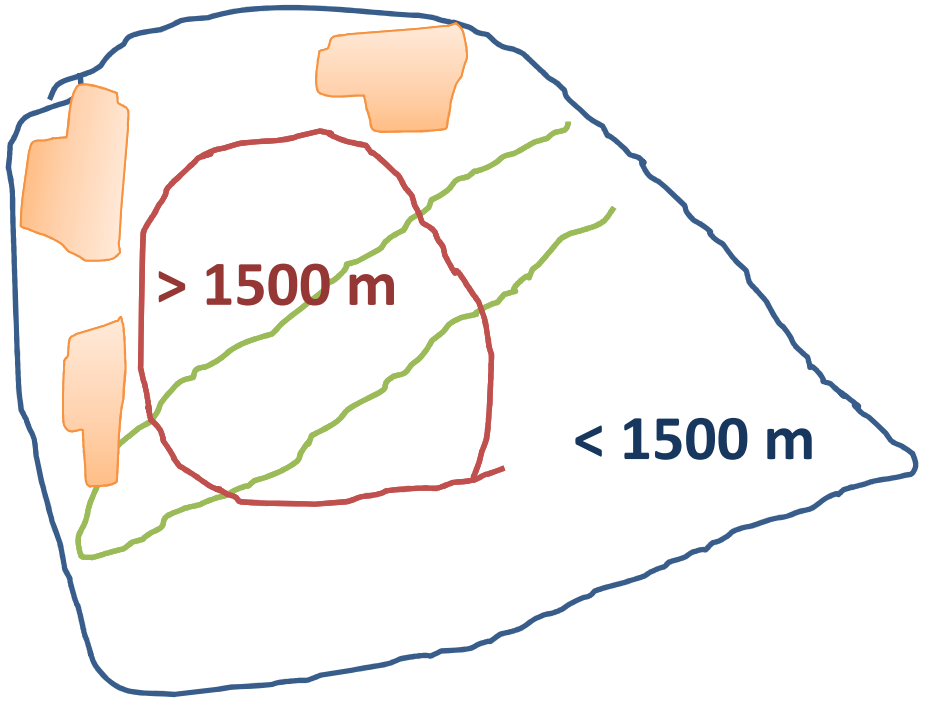
  – Subdivide zone < 1500m

i) in LSCF (sum)

ii) and rest of < 1500 m

GIS criterion needed !

If not possible now refinement for follow up project.



Definition of scenario zones

- **Large scale commercial farms (LSCF)**

Decision large scale commercial farms : evenly distributed in both scenario zones

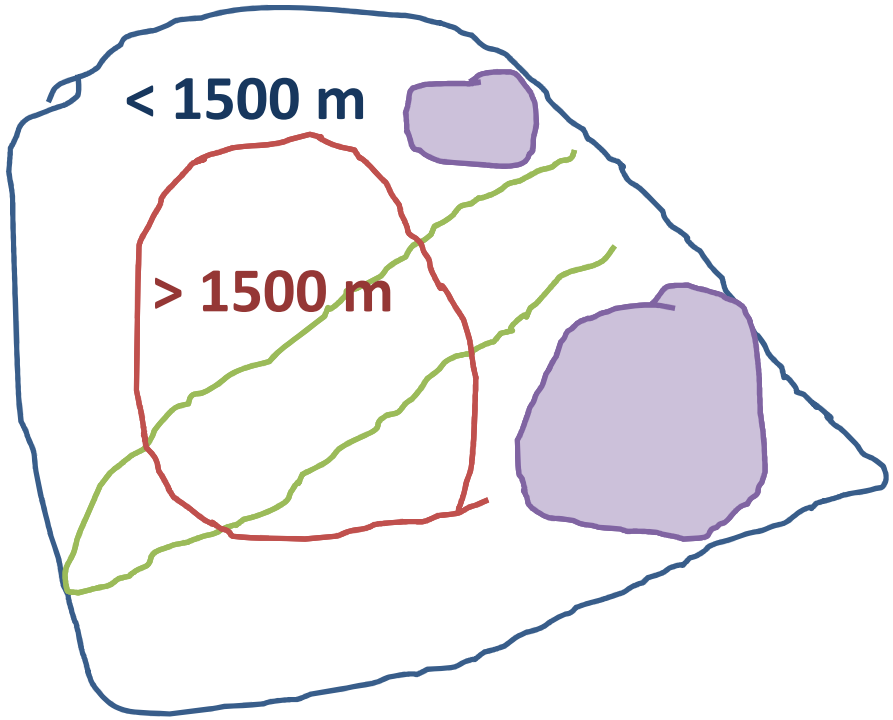
Small holders mainly between 1000-1500m in scenario zone < 1500m and evenly distributed in zone > 1500m

Definition of scenario zones

Exclude areas

(without agriculture e.g. Afar, Somali desert)

→**GIS criterion needed !**



→Decision: do NOT exclude

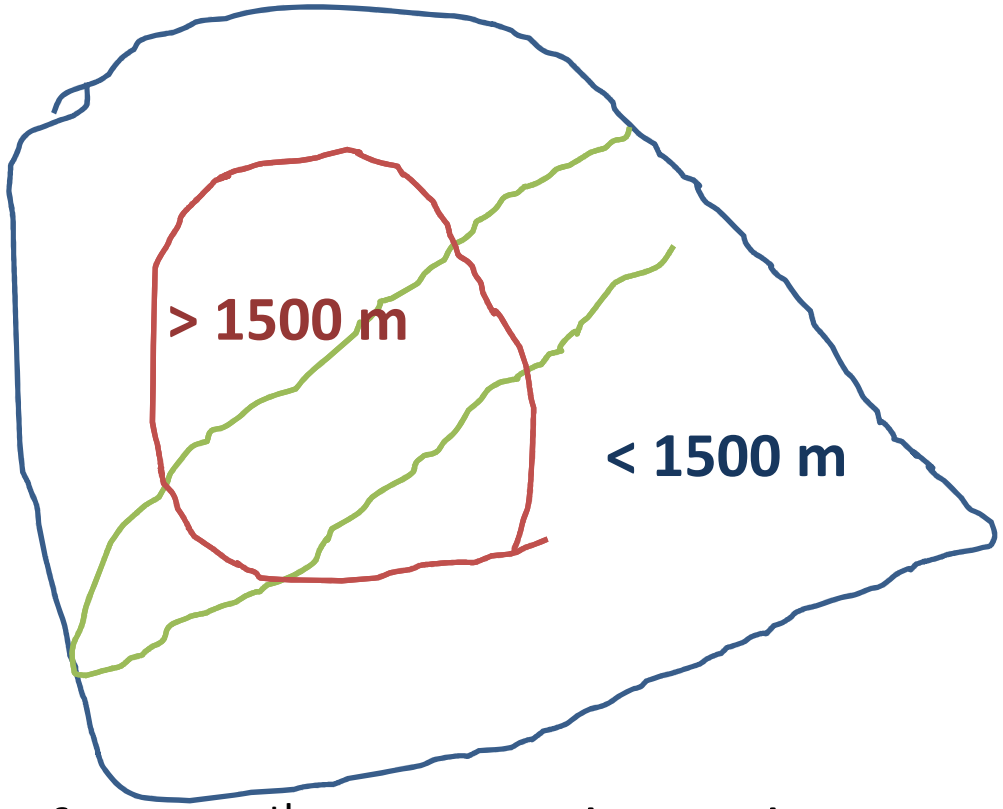
Protection goals in scenario zones

Small river

- Relevant in < 1500 m?
- Relevant in > 1500 m?

Temporary pond

- Relevant in < 1500 m?
- Relevant in > 1500 m?

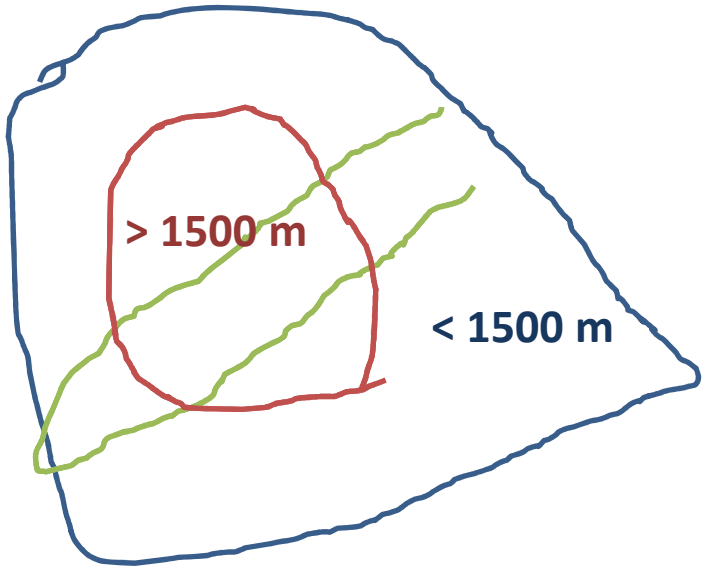


- Select grid points resulting from 90th perc. analysis where protection goal occur in reality.

Crops/cropping system in scenario zones

Which crops are relevant in which zones?

- Cotton
- Vegetables
  - Cabbage
  - Tomato
  - Potato
  - French beans
- Cereals
  - Teff
  - barley
- Pulses – field beans



scenario zones – table for PRIMET model

scenario zone	SW protection goal	crops + cropping calendar
		cotton?
	small river	cereals
Zone < 1500 m		vegetables
		vegetables
	temp. ponds	no cotton
		no cereals
		...
	small river	...
Zone >1500 m		...
		...
	temp. ponds	...
		...

conclusions scenario zones

2 zones delimited by elevation

- One scenario representing < 1500 m – SH predominantly between 1000m-1500m – LSCF everywhere in zone

- One scenario representing > 1500 m – SH every where in zone, LSCF – barley, wheat, maize everywhere in zone.

- Excluding areas → no, because present non-arable land (e.g. Somali) will become arable land in the future thanks to large scale irrigation projects – people and cattle will drink from the irrigation canals and rivers.

Discussion on protection goals and scenario zones