

CREATING AWARENESS AMONG DECISION MAKERS ON LAND DEGRADATION AND SUSTAINABLE LAND MANAGEMENT



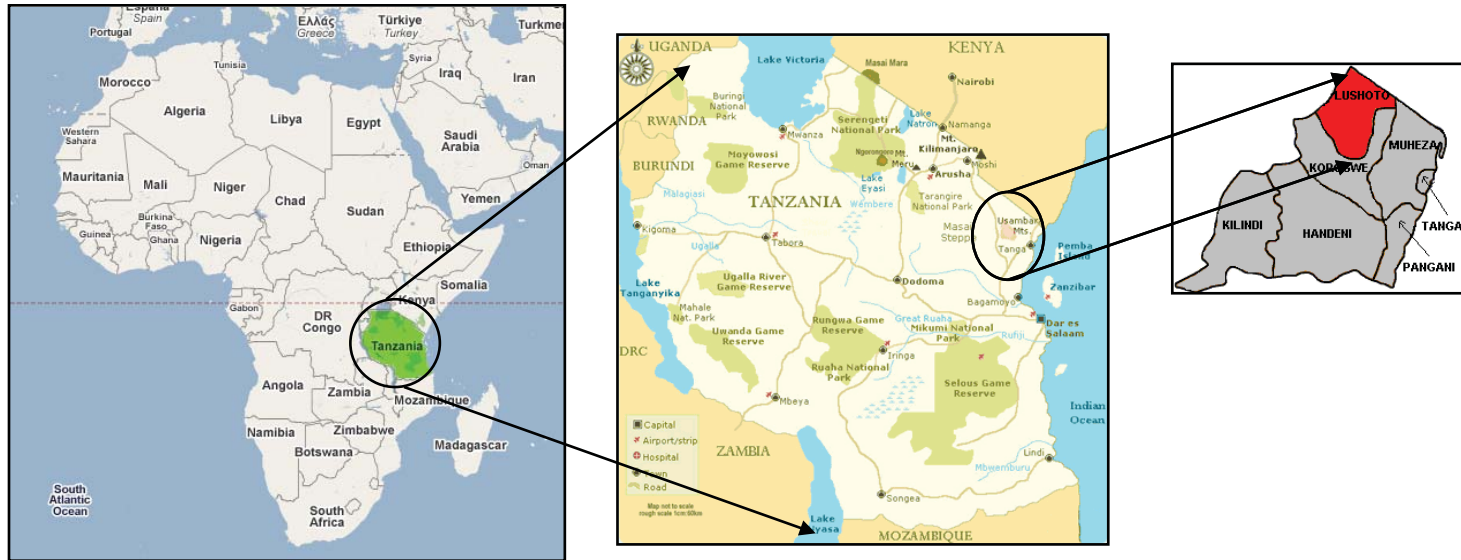
Machteld Schoolenberg

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WAGENINGEN UNIVERSITY
WAGENINGENUR

Study Area



- High population density; 90% in agriculture
- Vegetables, cash and staple crops [mostly rain fed]
- Av. farm size: 1-2 ha/household [7 members]
- Recently: increase in horticulture and fruit cultivation.

Introduction to the problem..

- Soil erosion [by run off] main cause degradation upslope fields
- Steep slopes.
- Low acceptance of SWC measures.

Land degradation has an increasing impact on agricultural production!



Introduction to the problem..

- Much research on LD and SLM in this region.
- **Communication gap** scientific results and policy makers [local district authorities]
- Research project 4 PhDs + postdoc: physical, sociological and economical aspects of SLM in East African Highlands [KE, TZ]
- WOTRO supports organization of workshop:
 - Aim: create awareness among policy makers of the problems
 - **Communication tools: catch attention and clear explanation!**

Computer game!



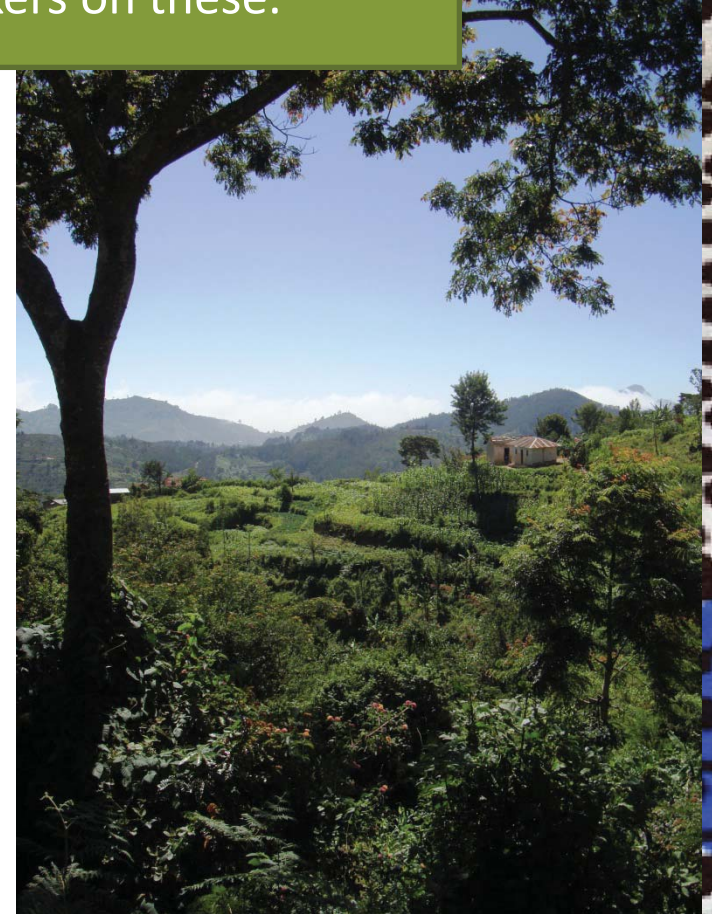
Study objective

To develop a computer game based on in depth understanding of farmers' choices in land management and their critical decision moments, and the influence of policy makers on these.

- Final aim: trigger discussion and provoke thoughts of policy makers on new approaches in policy & extension work
- Ambition: do justice to research AND to farmers' reality.

Game: strong message + easy game play.

In: Luchoto District, Usambara Mountains, Tanzania



“Serious game: a mental contest, played with a computer in accordance with specific rules, that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives.”



Sub objectives



1. Insight in farmers' choices regarding land management.
2. Insight in critical decision moments that farmers face, regarding both socio-economical and physical matters.
3. Insight in coping strategies and investment behaviour of farmers when the critical decision moments occur.
4. Translation of these results into a game design

Results

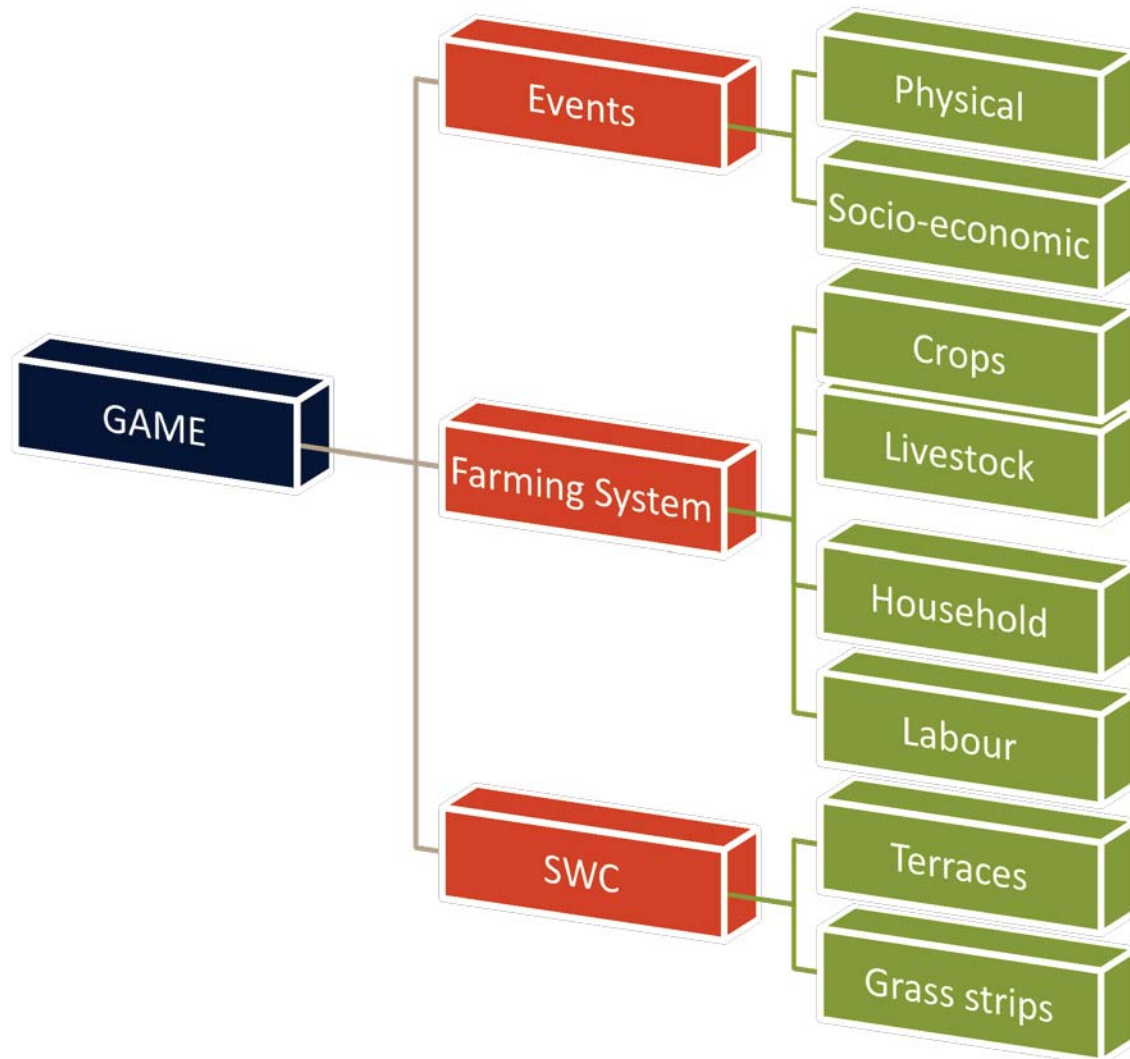
- Farmers keep savings → coping strategy for low market prices.
- Social relations important → conflict, illness or death
- Both staple and cash crops → resilience to physical events
- Off farm jobs are important, in addition to their agricultural system.

- Implementation of SWC techniques highly variable:
 - Lack knowledge on possible benefits of these measures.
- The influence of district authorities and extension workers = limited
 - Incentives/regulations do not extent beyond main roads / market points
 - Not well adapted to farmers' capital
 - Little acceptance

- **Game needs to show farmers' resilience + limitations.**



The Game



TIME TO PLAY!

<http://www.weirdbeard.nl/dev/highlandfarmer/>



Partners

Hannah-kay Piché

Graphic Design

www.hannahkaypiche.nl

WeirdBeard

Technical Design

www.weirdbeard.com



Thank you for your attention!

Questions?



AFRICAN HIGHLAND FARMER



600.000
Tshs

250%

YEAR 1

SOIL FERTILITY 80%

0 0 0

PLAY



CROPS



MAIZE

3.840 0%



BEANS

9.044 0%



SWEET PEPPER

5.791 0%



TOMATO

5.624 0%



COFFEE

57.000 0%

SPRAY PESTICIDE
[450 TSHS PER 10%]



0

0

0

0

0

CANCEL

OK

ALL PRICES IN TSHS

0

LIVESTOCK

	SELL PRICE 9.000	-	+	BUY PRICE 6.000	CHICKEN(S) 0
	55.000	-	+	45.000	GOAT(S) 0
	650.000	-	+	450.000	COW(S) 0

ALL PRICES IN TSHS

0

CANCEL

OK

HOUSEHOLD

SEND YOUR CHILDREN TO PRIMARY SCHOOL
[150.000 TSHS PER CHILD PER YEAR]

0 OF 2 Children

SEND YOUR CHILDREN TO SECONDARY BOARDING SCHOOL
[200.000 TSHS PER CHILD PER YEAR]

0 OF 0 Children

PAY MALARIA CHECK-UP AND MEDICATION
[5.000 TSHS PER PERSON]



CANCEL **OK**

ALL PRICES IN TSHS

0

LABOUR

- TAKE ON AN OFF-FARM JOB [ONE ADULT]**
[250.000 TSHS PER YEAR EXTRA INCOME, 50% ON FARM LABOUR REDUCTION]
- TAKE ON AN ON-FARM JOB AT ANOTHER FARM [ONE ADULT]**
[80.000 TSHS PER YEAR EXTRA INCOME, 20% LABOUR REDUCTION]
- HIRE ON FARM LABOUR [ONE ADULT]**
[80.000 TSHS PER YEAR EXTRA COSTS, 20% LABOUR INCREASE]
- BORROW A FIELD FOR ONE YEAR [0.5 HA]**
[30.000 TSHS EXTRA COSTS, 50% PRODUCTION INCREASE, LIMITED BY LABOUR]

CANCEL

OK

GRASS STRIPS



CONSTRUCT GRASS STRIPS ON YOUR FIELD

GRASS STRIPS HAVE A SOIL AND WATER CONSERVING FUNCTION.

AMONG OTHERS, ONE OF THE BENEFITS OF GRASS STRIPS IS THAT THEY CAN REDUCE THE EFFECTS OF SOIL EROSION ON THE SOIL FERTILITY OF A FIELD.

THE CONSTRUCTION OF GRASS STRIPS IS LIMITED BY THE LABOUR AVAILABILITY.

CONTINUE



CROP DISEASE

There was an outbreak of a crop disease affecting all your crops. You lost 30% of your crop production.

ANNUAL SUMMARY

FIELD

MAIZE	0% X	502.350 TSHS
BEANS	0% X	479.350 TSHS
SWEET PEPPER	0% X	1.250.860 TSHS
TOMATO	0% X	1.805.150 TSHS
COFFEE	0% X	549.040 TSHS

HIRED FIELD 0% EXTRA

SUB TOTAL 1 0 TSHS

SAVINGS 600.000 TSHS

HOUSEHOLD

LABOUR INCOME 0 TSHS

LIVING COSTS -660.000 TSHS
[2 ADULTS + 2 CHILDREN]

LIVESTOCK PRODUCE 0 TSHS

CHILD PENSION 0 TSHS +

SUB TOTAL 2 -660.000 TSHS

TOTAL
- 60.000 TSHS

CONTINUE

[Total = sub total 1 + sub total 2 + savings]