

Concepts for Agriculture

Example Africa -

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Structure of the Lecture

1. Introduction
2. Traditional agriculture in Africa
3. Changes since colonialism
4. Need for „modernization“ – but which type?
5. CAADP - Comprehensive Africa Agriculture Development Programme
6. Conclusion

1. Introduction

1.1 My first impression in Africa

- Food production by small farmers/ pastoralists
 - Poverty
 - Overgrazing
 - Erosion
- Export production: Cacao plantages
 - Trees in large areas cut down, tropical rainforest destroyed













1.2 Why are small farmers/ pastoralists poor? What hinders sufficient production?

- Potential reasons?
 - Traditional production modes?
 - Colonialism?
 - World market?
- How could the production be improved? Is there a way without ecological destruction?

2. Traditional agriculture in Africa

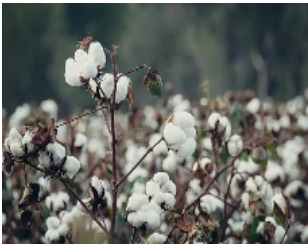
- Adaptation to ecosystems
- Risk minimizing
- Common and family property
- Solidarity system

2.1 Adaptation to ecosystems

- 1000s of years seed and breed selection
- Cattle transport tree seeds and allow tree growing
- Techniques of erosion control known
- Contribution to biodiversity

2.2 Risk minimizing

C-Bush field



Distribution of land as risk minimizer

A-Family field



C-Family field



B-Family field



B-Bush field



B-Bush field



Village



A-Bush field



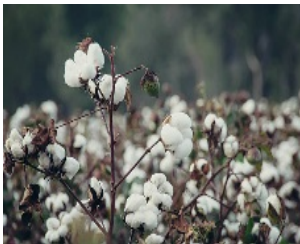
B-Family field



C-Family field



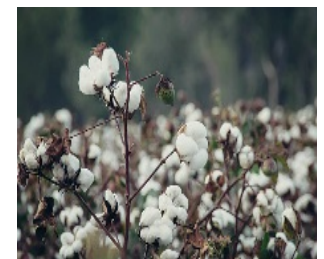
A-Bush field



A-Family field



C-Bush field





C-family to A-family



C-family to B-family

**Distribution of
cattle as risk minimizer**



B-family to A-family



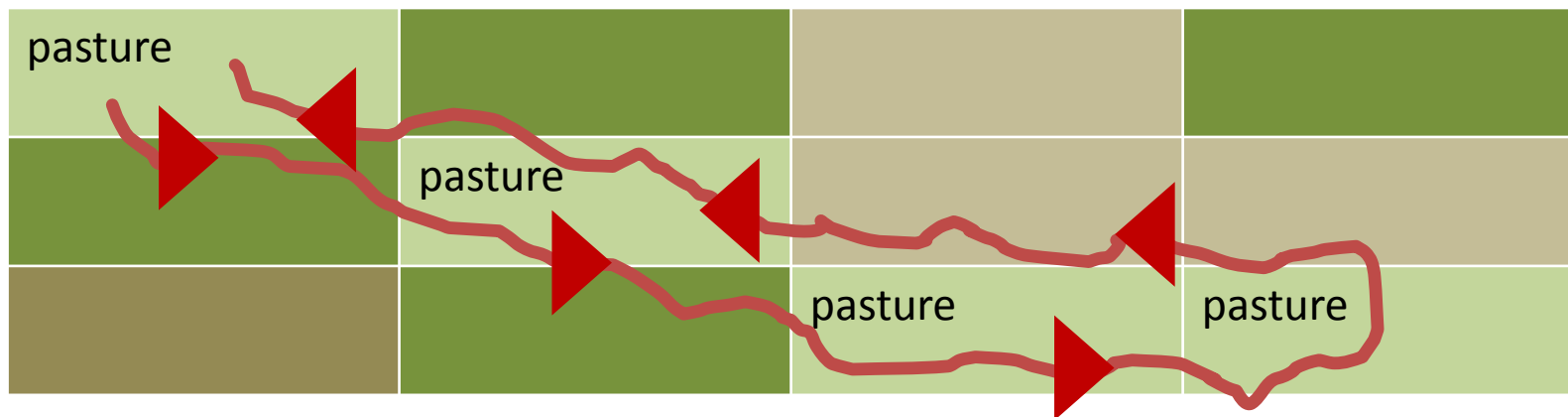
A-family to B-family



B-family to C-family

2.3 Common and family property related to climate and ecology

Distribution of land adopted to nature and social solidarity



3. Changes since colonialism

- Introduction into the world market – cash products
 - Increase of small ruminants (esp. goats)
 - Coffee, tea, cacao, cotton, sugar cane, rice
 - Modernization theories: Land reforms, irrigation and large irrigation dams, Green Revolution (introduction of hybrid seeds, pesticides, herbicides, GMOs).
- Traditional social structures are interpreted as inflexible/
barriers
 - Social and political changes – weakening traditional decision-making institutions
 - Disconnecting farmers and pastoralists
 - Destabilization of local legal systems (land rights) and solidarity system

4. Traditional agriculture under threat

- Traditionally: shifting agriculture (30 years fallow). Need for land: if land unproductive, new land is taken or land extended; lack of active inputs for restoring or improving soil fertility
- Population growth
- Land use conflicts
 - urbanization, enlargement of settlements,
 - Enlargement of infrastructure,
 - closure of forests and nature protection areas

- Land grabbing = lack of catastro & good governance
- Increase of large irrigation farms, monocultures (foreign investment)
- Import of food products and food aid
- Lack of agricultural extension services and extension workers lack knowledge in organic farming
- Land extension to marginilized areas
- Climate change

4. Need for „modernization“ – but which type?

Need for intensifying agriculture and produce surplus as population growing fast but how?

4.1 Green Revolution – a real option?







impact

Monoculture

Loss of biodiversity
Erosion

Chemicals

Loss of biodiversity
Sicknesses
Financial dependency of farmers

Hybrid seeds

Loss of biodiversity
Financial dependency of farmers

Irrigation

Salinization, need for water

Labour

Not labour intensive

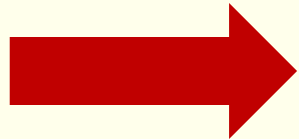
Total

High production yields (at least for a while), mainly for cities and export



Example Ethiopia

- Agricultural outputs = 45% of GDP and 90% of exports (Feed the Future 2013).
- 30% of the population = below the national poverty line,
- 44% of children less than 5 suffer from stunting,
- child undernutrition rates = among the highest in the world (Feed the Future 2013)
- Growing cities



Need for increased food production

Ethiopian Agriculture Development Led Industrialization (ADLI) plan

- Improve agricultural techniques
- Credit schemes and high interest rates
- Increase productivity
- Input packages:
 - inorganic fertilizer
 - Improved seeds
- Pressure on farmers
- Training centres
- Vocational training
- Foreign investment in agriculture (mainly rice, sugar)

Durum Wheat (*Triticum durum* Desf.): The farmer



***Traditional knowledge is the basis for
modern research & development***

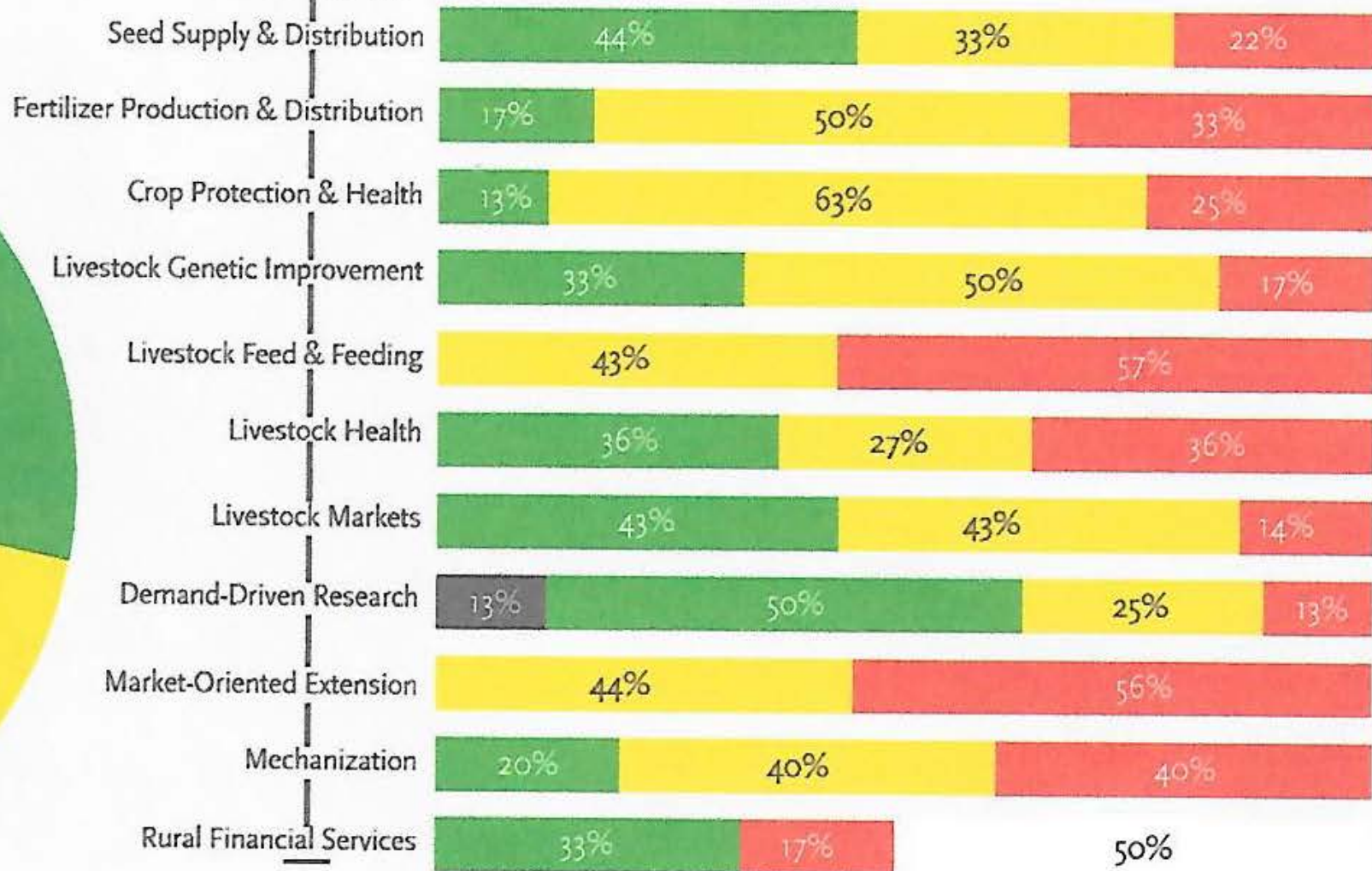


Conclusion Ethiopia

- Trying to increase production and productivity for food security
- Input packages and new techniques rarely accepted by the farmers
- Foreign investment schemes rarely include local needs and ecology
- Pastoralists rarely included in the programmes
- Lack of land security and land use planning
- Topdown approach
- Extension service biased. No programme for organic farming



PROGRAMS

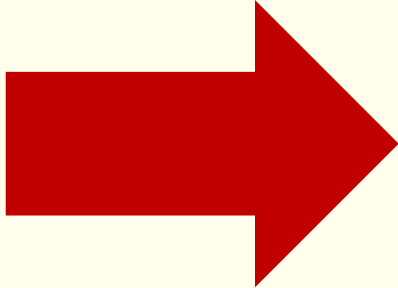


Completed
 On Track
 Slightly Delayed
 Significantly Delayed
 Not Started

PERFORMANCE SUMMARY OF SUB-DELIVERABLES

Ethiopia

- Country with the highest biodiversity world wide
- Country with the highest number of endemic species



Special obligation for protection
of biodiversity

Example Eco/ organic agriculture Burkina Faso

- President Thomas Sankara (1983-1987)
- Lutte contre la Désertification – national policy
 - Protection zone for pastoralists, land use planning
 - Village tree planting
 - Cattle guarding by farmers
 - Soil protection and improvement, organic fertilization
 - Erosion control
 - Water retention
 - Organization of farmers
- Farmer's organizations based on tradition or organized by Revolutionary Committees

- Intercropping and organic farming



Erosion control



Water detention



Afforestation



Conclusion Burkina

- Organic farming, afforestation and protection of pastures = government policy, supported by local and international NGOs
- Successful. After Sankara's death, policy of ecodevelopment weakened
- Advantage of the approach: labour intensive: creating jobs for rural population, protecting biodiversity, increasing food production

Example: Kenya

organic farming/ agroforestry supported by NGOs and researchers



USAID in Kenya, Ethiopia, Uganda

Pastoralism: moving with climate, 1 cow gives 0.5 liters milk, pastures often degraded, land grabbing, access to water reducing, cows = family members

USAID:

- Building slaughter houses in pastoralist areas
- Aiming to integrate pastoralists into the market and make them sell meat
- No improvement of pastures



5. CAADP - Comprehensive Africa Agriculture Development Programme

- Sustainable agricultural intensification (incl inorganic fertilizer)
- Supporting small-holder farmers
- Diversification of production
- Use of "smart" subsidy policies, encouraging the adoption of innovations
- Secure the rights to land, water and rangeland, whether those acquired within the customary framework or those formalized by modern law.
- Cross-border trade
- Land and water management

6. Conclusion

- The logic behind the traditional system was perfectly referring to the natural/ ecological conditions and social needs. It provided labour and income, it protected and further developed biodiversity, it protected people from climate variabilities, it supported social solidarity, it provided food security, it is closely linked to the socio-cultural system
- Nevertheless, changes are needed: active input has to be provided in improving soil and pasture quality, in afforestation, access to water - and goats need to be guarded and restricted
- Capacity building in organic farming and cattle holding and land tenure security is needed – but any modernization must build on the character and logic of the traditional system and the natural conditions

- The capacity of extension services in organic farming and ecodevelopment needs to be strengthened; their numbers have to increase
- There is a need for supporting local markets, store rooms and cooling as well as local food processing and local transport for trade
- None of the agrarian policies targets organic farming or ecodevelopment. Change is needed. President Sankara in Burkina Faso has proved that a political will can lead to huge changes improving nutrition by improving the natural environment and protecting the farmers' and pastoralists' rights
- The existing examples of foreign direct investment and modernized farming are not adapted to the ecological and socio-cultural needs. They contribute to state income through taxes and customs but they do not contribute to improve the livelihoods (esp. nutrition) of the small farmers and cattle holders or to protecting ecosystems and biodiversity
- There is a need for more research in organic farming and ecodevelopment to provide hard figures for better argumentation