



What challenges does Agriculture, Extension and Advisory Services face today?

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The state of Global food security

- ✓ **Hunger and Undernourishment:**
 - Global hunger down 100 million over the last decade: 805 million people estimated to be chronically undernourished in 2012-14 (SOFI 2014)
 - Projections suggest that production increases alone would not be sufficient to ensure global food security by 2050 (FAO 2009)
 - 370 million persons would still be undernourished in 2050, unless governments make sure access to food by the needy and the vulnerable (FAO 2009)

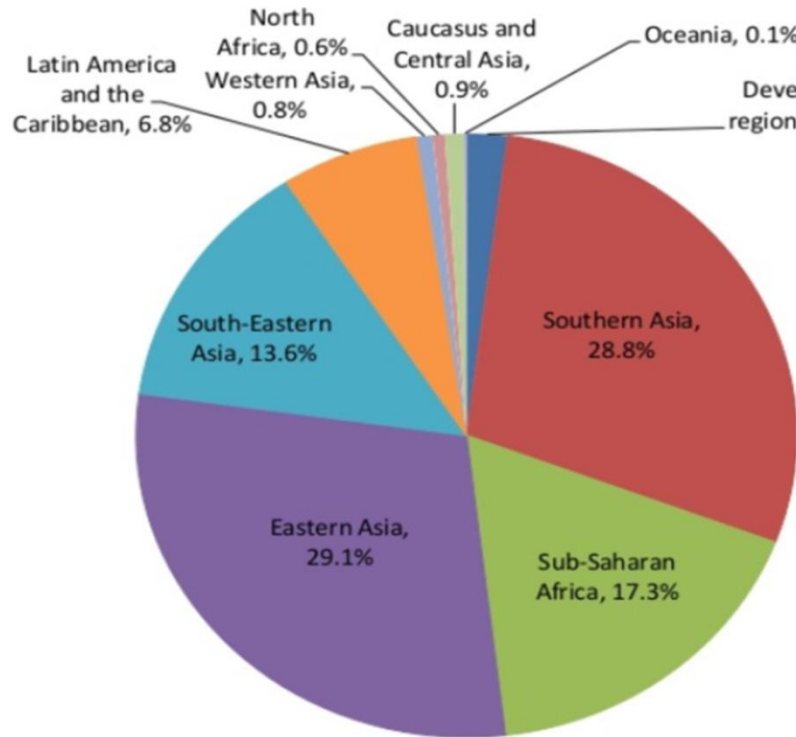
- ✓ **Obesity is increasing, linked to urbanization (FAO 2013)**



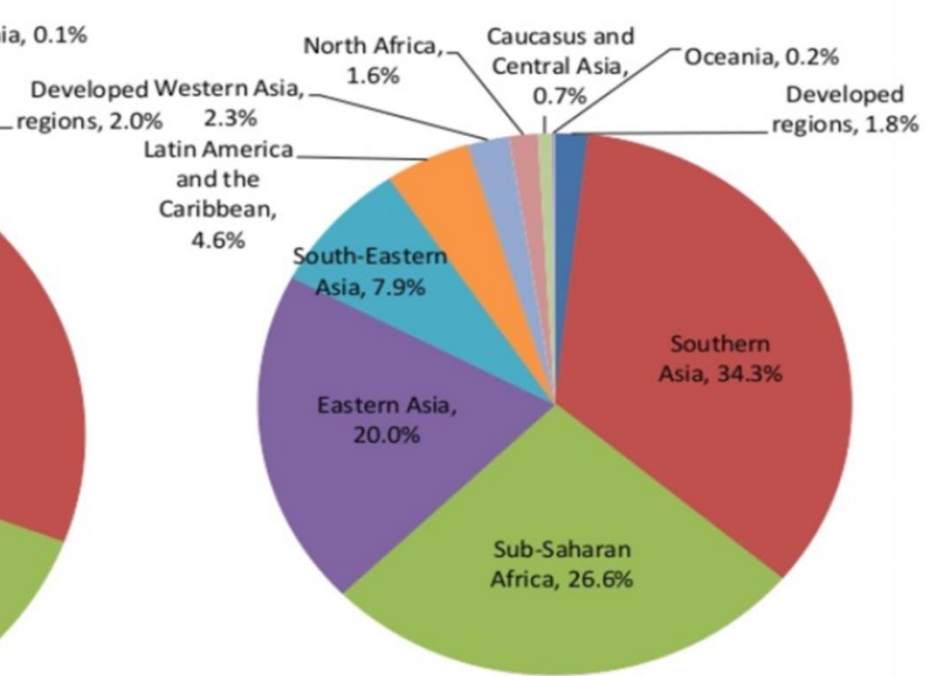
Changing World Hunger distribution

1990-92

2012-14



Total = 1015 million



Total = 805 million



Global Agriculture - Challenges

- ✓ Feed the world, and better: food demand and production
- ✓ Cope with scarce resources and manage them more sustainably
- ✓ Raise rural incomes and contribute to overall development and poverty reduction
- ✓ Adapt to the agro-ecological conditions of climate change
- ✓ Changing drivers for agricultural growth



World demand for food increases

- ✓ World's population is growing - to a projected 9.6 billion people in 2050
- ✓ Changing food consumption patterns in most developing countries due to rising incomes
- ✓ 1/3 of food produced is lost or wasted globally
- ✓ Urban areas account for 70% of the world population in 2050 (up to 49% at present)
- ✓ Eastern Europe and Central Asia have the strongest growth in per capita food consumption since 2000, at 22 %; Latin America and Asia at almost 20 %. Africa only 3 % higher in 2012 than in 2000



Meeting the growing food demand

- ✓ FAO projects the need to increase agricultural output by at least 60 % globally, and 100 % in developing countries (FAO 2014)
- ✓ Water demand is projected to increase by 55 % by 2050



Cope with scarce resources and manage them more sustainably

- ✓ 1/3 of farm land are degraded
- ✓ Up to 75 % of crop genetic diversity has been lost, 22 % at risk
- ✓ Over the past decade, some 13 million ha of forests a year were converted into other land uses
- ✓ Half of the fish stock are exploited
- ✓ The share of water available for agriculture is expected to decline to 40% by 2050 as overall demand is projected to increase by 55%



Raise rural incomes and contribute to development and poverty reduction

- ✓ An estimated 1,2 billion people in developing countries still live in extreme poverty
- ✓ With 75% of the world's poor living in rural areas
- ✓ They are most dependant on agriculture as local economies are inadequately diversified
- ✓ Gender gaps often occur more pronounced among the poor



Adapt to the agro-ecological conditions of climate-change

- ✓ By 2080, 75 mill. ha of land in SSA will be lost for rainfed agriculture due to climate change
- ✓ Demand for irrigation will grow by 5 - 20 % worldwide
- ✓ Increase of extreme weather events (floods, draughts, storms, ...)
- ✓ 20-30% of species likely to be at an increasing risk of extinction with raising temperatures
- ✓ Improve resilience of production system and the local communities → ability to cope with changes (FAO 2014)



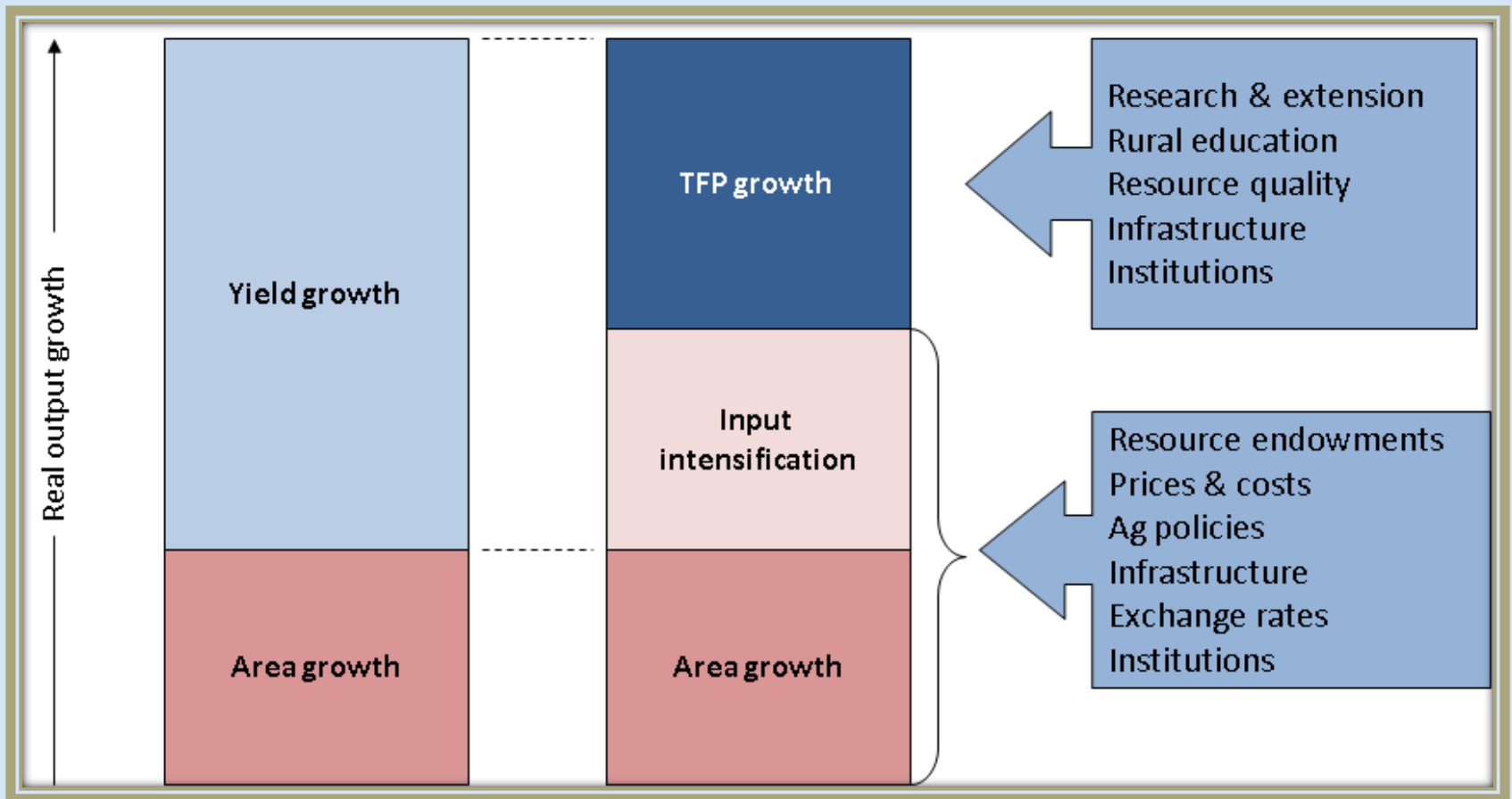
Changing drivers of agricultural growth

- ✓ Input intensification and land increase are no longer main factors of productivity growth
- ✓ But Total Factor Productivity - Difference in growth between outputs and inputs
→ efficiency gains

Not only doing more with less, but a matter of how: right action at the right time, organizational innovations, new ways of collaboration, flexibility, network, etc.

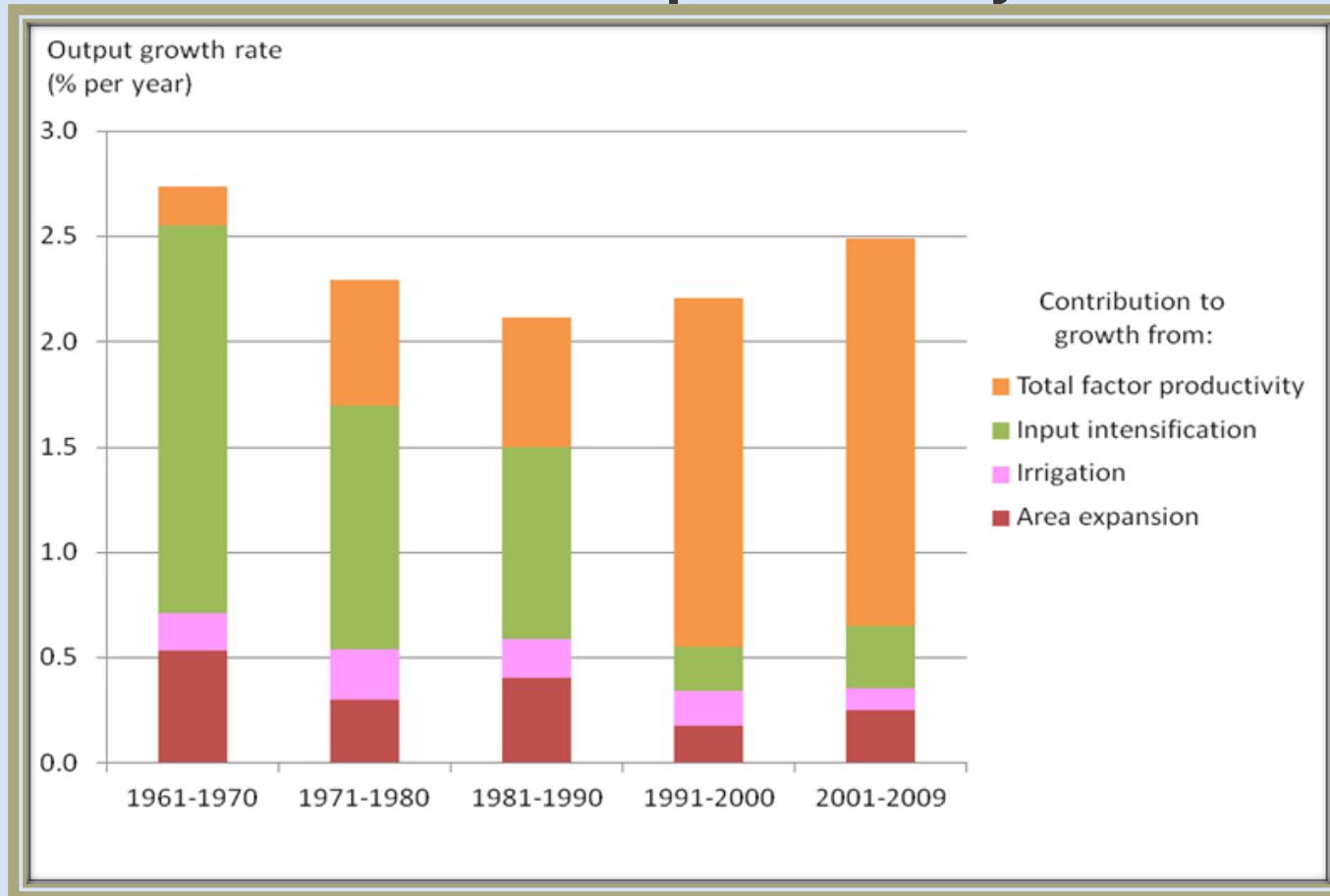


Unifying concept: Resource-led growth vs. total factor productivity (TFP) growth





Growth in global agricultural output has remained steady; Source of growth has shifted from resource-led to productivity-led



Source: Fuglie, K.O. 2012, "Productivity Growth and Technology Capital in the Global Agricultural Economy", in Fuglie, K.O., S.L. Wang, and V.E. Ball (eds.) (2012), *Productivity Growth in Agriculture: An International Perspective*, CAB International, Oxfordshire, UK.



Responses to the challenges

- ✓ A holistic approach based on 5 key principles that balance the social, economic and environmental dimensions of sustainability (FAO 2014):
 1. Improving resource use efficiency
 2. Conserve, protect and enhance natural resources
 3. Protect and improve rural livelihoods and social well being
 4. Enhance the resilience of people, communities and ecosystem (especially to climate change and market volatility)
 5. Good governance



Who needs to respond?

Evidences from SOFA 2014 - Importance of FF

- ✓ More than 570 million farms worldwide
 - There are more than 500 million family farms (FF)
 - FF operate about 75% of farmland
 - FF produce more than 80% of food

- ✓ Most of the world's farms are small
 - 84% cultivate less than 2 ha, they cover 12% of farmland
 - Less than 2% cultivate more than 50 ha, and occupy 2/3 of farmland



How to respond? Evidences from SOFA 2014

- ✓ Farms households have many sources of income
- ✓ Small farms sell less on the market
- ✓ Small farms have higher yields than large farms
- ✓ ... but they have lower labor productivity



Meeting the challenges requires innovation

- ✓ Innovation means doing things better, using knowledge
- ✓ Agricultural Innovation systems include all institutions and individuals that enable farmers to innovate through:
 - Enabling environment, including access to markets
 - Agricultural R&D for family farms
 - Inclusive agricultural and rural advisory services



Agricultural Extension and Rural Advisory Services are priority areas

For

- ✓ Closing the gap between actual and potential productivity
- ✓ Increasing labor productivity
- ✓ Improving farmer's management skills
- ✓ Ensuring widespread adoption of more sustainable agricultural practices
- ✓ Supporting rural livelihoods

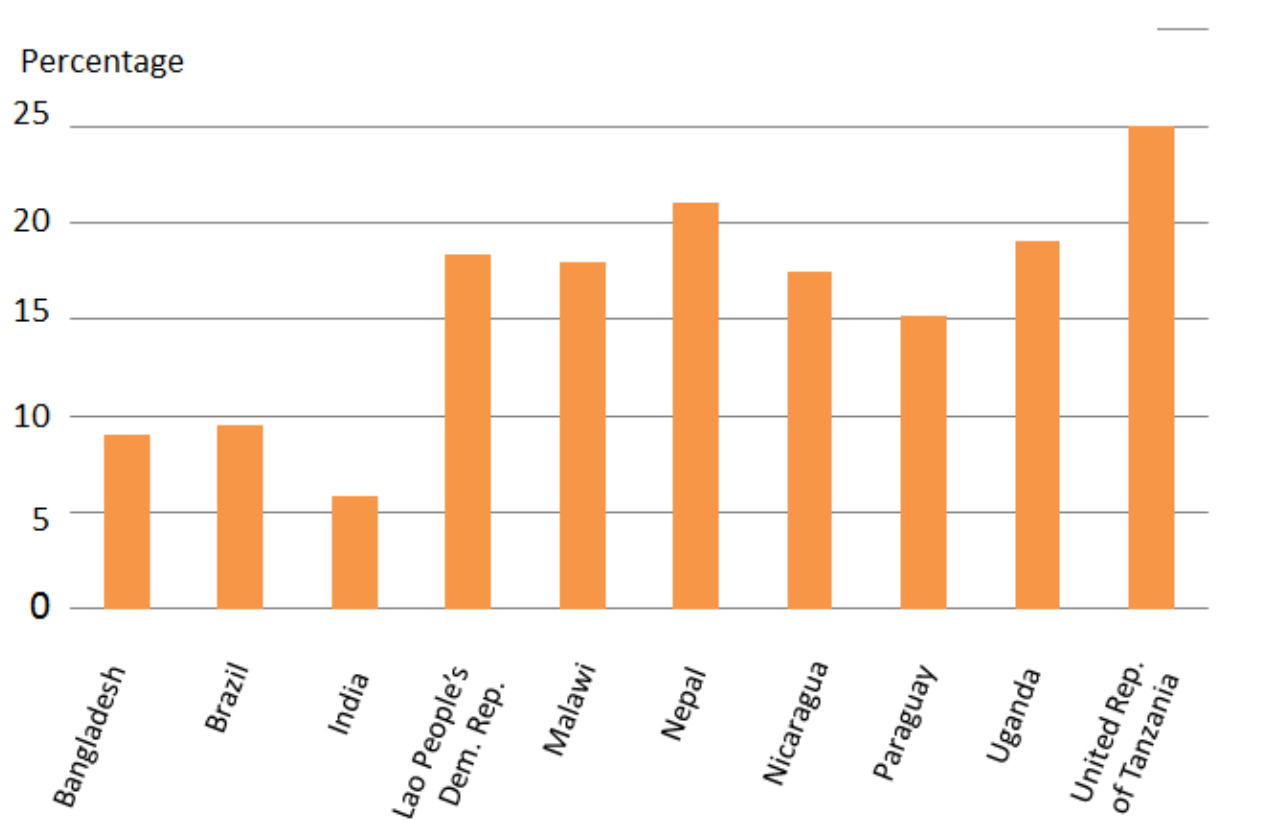


Challenges faced by Extension and Advisory Services (SOFA 2014)

- ✓ Only small share of farms interact with government extension agents
- ✓ Smaller farms have less access to extension
- ✓ Women farmers have less access than men
- ✓ Limited evidences on trends and patterns of extension in terms of expenditure/investments and outreach



Share of farms accessing information through extension

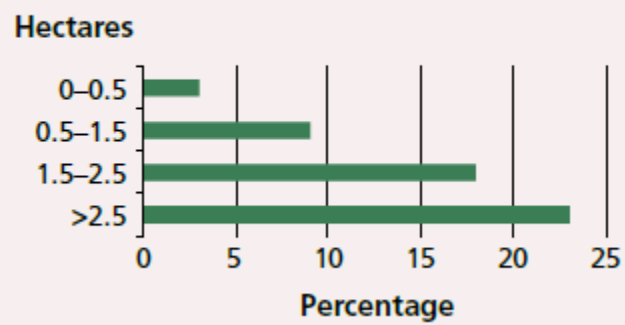


Source: SOFA 2014

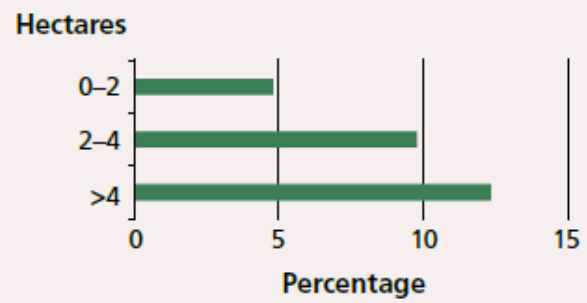


Share of farms accessing extension by farm size

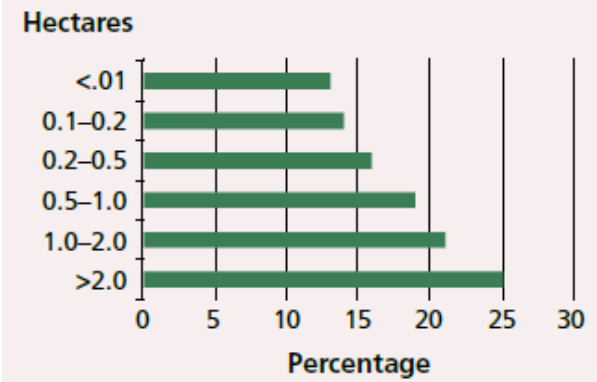
Bangladesh, 2011-12



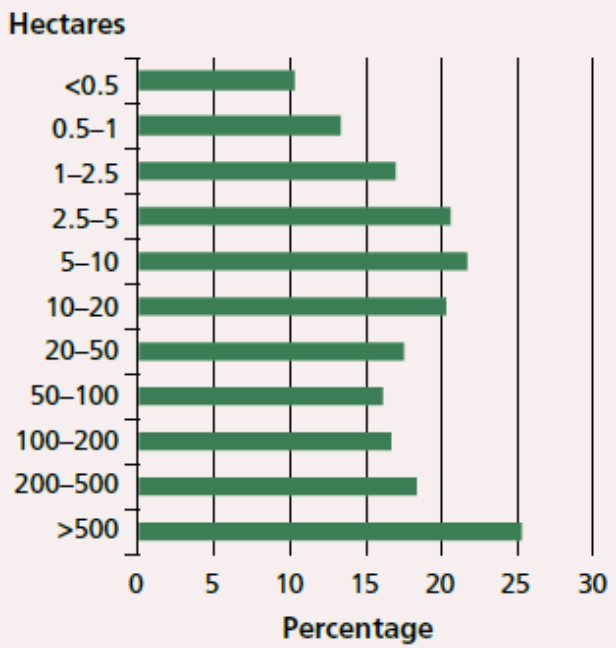
India, 2005-06



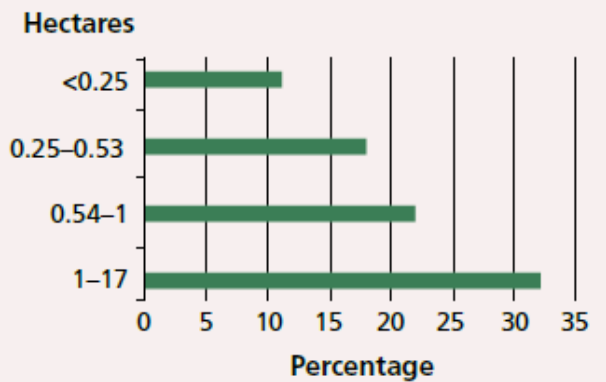
Malawi, 2006-07



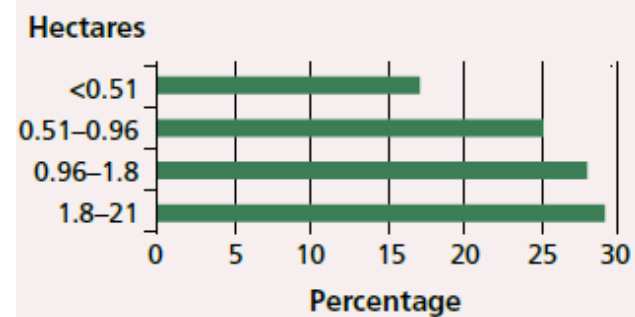
Nicaragua, 2011



Nepal,* 2003



United Republic of Tanzania,* 2009





Conclusions for Extension responses



Extension responses - Outreach

- ✓ RAS must take into account the diversity of farmers' needs/demands
 - Socio-economic conditions, household size and gender
- ✓ Increase group approaches, partnerships, ICTs, ... for up-scaling
- ✓ Making advisory service available for small FF
- ✓ Broadening and diversifying income sources for FF
- ✓ Governments to consider trade-offs between the cost and broad delivery of services in remote areas



Extension responses - Natural resources and climate change

- ✓ Improving knowledge, research, innovation and implementation towards more productive and sustainable use of water, energy, etc.
- ✓ Promoting the Climate-smart agriculture (CSA)
- ✓ Providing suitable technologies, sustainable and inclusive policies, effective extension programs and sound education system so that more is produced with less in good quality



Extension responses - Institutional/Organizational Dev

- ✓ Efficiency gains through institutional and organizational performance and up-to-date infrastructure
- ✓ Not only more with less, but also at the right time
- ✓ Smaller, flat organization with high flexibility
- ✓ Partnerships for synergies
- ✓ Organizing smallholders → social capital FOs)
 - Marketing, Empowerment, ...



Extension responses - Learning/education/knowledge mgt

- ✓ Diverse profiles of advisors with new competencies (brokering, organizational development, team work, innovation capacities, management skills,...)
- ✓ Learning, training and education for advisers according to the challenges to be addressed
- ✓ Partnerships for knowledge management
- ✓ Use of ICTs for knowledge mgt./exchange, learning, ...



Extension responses - Investments and financial mechanisms

- ✓ Generate evidences on quality and impact of RAS
- ✓ Need to increase public investment in RAS
- ✓ More balanced financial support to supply and demand side
- ✓ Innovative financial mechanisms (co-financing arrangements, funds managed by FOs, etc..)



Extension responses - Networking and Partnership

- ✓ Increased complexity of problems
 - Requires joint efforts
 - Tailor made solutions
- ✓ Value added through synergies
 - Complementarity of providers
 - Increased visibility and impact
- ✓ Insufficient systematic analysis of networks and partnerships
 - More research needed on what works under which conditions



THANK YOU for your ATTENTION