

Agricultural Mechanization Strategies (AMS) – Roles of Private and Public sector

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Presentation content

- Issues in mechanization
 - Example of private sector driven equipment supply and services chain
 - Past mechanization schemes in Africa
-

- Agricultural Mechanization Strategies (AMS)



Issues in mechanization

- Roles of Private and Public sector needs attention
- Small farmers' incomes and livelihoods should be enhanced through market-oriented farming
- Links to inputs and agric. equipment suppliers
- Effective advisory and extension services
- Access to financial services
- Rural infrastructure: access to markets (roads), to processors, to energy
- Sustainable use of natural resource base
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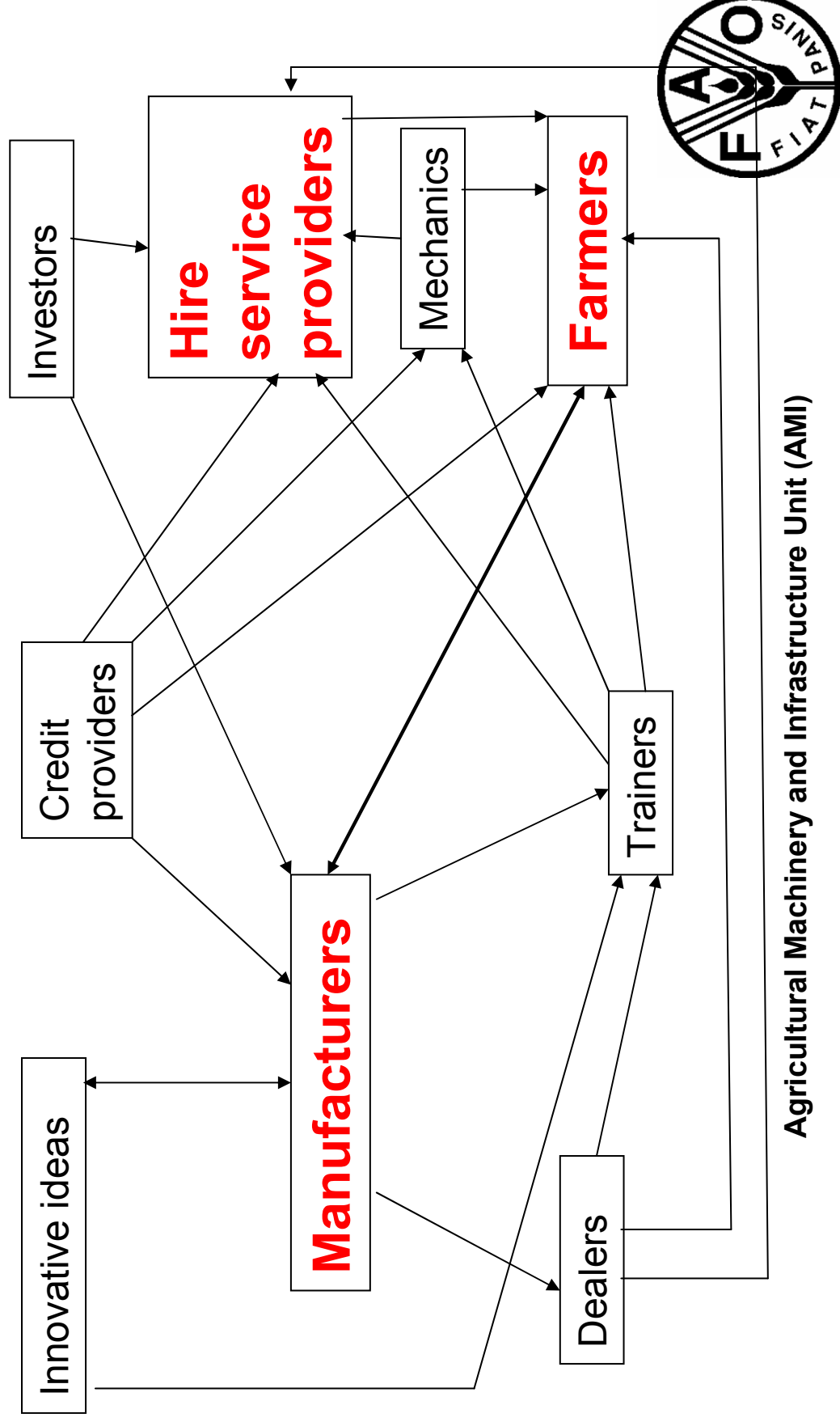


Comparison of agricultural sector data

(Source : FAO, 2001)

Countries	Agricultural Land (000ha)	Irrigated Cropland as a Percentage of the total (%)	Fertilizer (kg/ha)	Mechanization (Tractor per 000 ha)
Algeria	8 265	6.8	12.8	11.4
Burkina Faso	4 400	0.6	0.4	0.5
Egypt	3 400	100	392	26.8
Japan	4 762	54.7	282.4	423
Mali	4 700	2.9	8.9	0,6
Niger	4 500	1.5	1,1	0,03
Nigeria	33 000	0.7	7.1	1
DR Congo	7 800	0.1	0.2	0.3
Cameroon	7160	0.5	7.3	0.1
World	1 534 466	18,1	90,1	17,5
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Machinery supply chain interactions



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Examples of Mechanisation schemes in Africa

West Africa:

- Ghana
- Sierra Leone
- Senegal
- Mali

East Africa:

- Tanzania
- Kenya
- Sudan
- Uganda



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The time scale in Africa

- **Early Colonial period**
 - introduction of 'innovative' machinery to open up land for settlement
- **Late Colonial period**
 - Foreign investment in large mechanised estates
- **Independence**
 - Public sector expanded the agricultural frontier (bush clearance, irrigation, increased land availability, large parastatals)
 - Mechanisation centres established with tractor hire services, R&D, Repair, support services



The time scale (II)

- Period of Structural Adjustment
 - Closed many public tractor hire schemes
 - Assumption that private sector takes *easily* over tractor based businesses was incorrect
- Recent events of the 21st century
 - Governments have re-newed interest in agricultural machinery import and sustainable use
 - Post-conflict/vulnerable countries are keen to obtain machinery as to consolidate agricultural recovery



Mali

- Typified by handtools and animal traction
- Some tractors in the irrigated perimeters of Ségou (Office du Niger) and cotton areas of Sikasso and Koutiala (CMDT)
- 28 hp Bouyer tractor (“intermediate mechanisation”)
- Some second hand tractors introduced
- Farmers mechanisation cooperative set up in Koutiala (2002)
- 200 two-wheel tractors in the mid 1990s
- Motorised rice threshers in Ségou (1980s and 90s)
- Today, Government has established a tractor assembly plant with a capacity of 6000 tractors / year. Currently it works at 600/year due to lack demand



Sudan

- Agricultural Corporations ran schemes and provided mechanisation services - heavily subsidised
- Rainfed areas mechanised with wide level disc harrow-seeders for sorghum, much criticised but farmers have not accepted alternatives
- Some private sector initiatives but most stifled by government
- Some private “entrepreneur” farmers provided little management and sometimes even failed to know the location of their plots



Why did the schemes fail?

- The public sector is a poor manager of commercial ventures

Maybe true, others believe not

But the public sector does have difficulty in providing timely services, even for seed and fertiliser, more so for mechanised services and spare parts



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Is the private sector better able to manage commercial farming enterprises?

Not necessarily so – note the case reported of some “entrepreneur farmers” in Sudan

Some services have been and still are successful – e.g. in the Rift Valley of Kenya

But are these services reaching the resource poor farmers?



Is the private sector better able to manage tractor hire schemes?

This would also seem controversial

These are often the “easy and quick” answers of today’s rules of development specialist

Sceptics (and often the public sector in particular) may find many reasons to disagree



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What does a mechanization scheme need to do?

Provide timely services

Public sector

- Too many rural small farmers
- Small irregular fields
- Stumps, (souches d'arbres)
- Time lost in turns and transport causes equipment damage

Private sector

- Not obliged to accept all requests
- Can better plan services to be selected (nearby?) areas
- But risks criticism for this approach



Provide timely services (cont.)

Public sector

- 5 or 6 day week
- “Office” hours
- National holidays
- Is “overtime” allowed?
- May have to return to base each evening

Private sector

- Little or no constraints on working hours
- May even stay with equipment overnight



Downtime for repairs/maintenance

Public sector

- Spares and other inputs subject to bureaucratic purchasing procedures
- May need to pass through Ministry in the capital
- Often no “petty cash” box
- Temptation to cannibalise other equipment

Private sector

- Relatively quick purchasing procedures
- Head office probably on-site or at least within easy reach



Does equipment conform to farmer needs?

Public sector

- Little influence over choice if “Aid-in-kind”
- Temptation for Ministry to purchase additional special-purpose items which will rarely be hired commercially
- Unlikely to acquire equipment which will rarely be hired out
- But also unlikely, e.g. to make innovative equipment (e.g. for conservation agriculture)

Private sector



CONCLUSIONS

- Many examples of ambitious schemes with the setting up of service workshops, training centres, research centres and dealer networks
- Few success stories, indeed none from the public sector?



Some notable successes

- Animal traction use, particularly for cotton, has flourished
- Motorised equipment for post harvest (threshers and mills)
- Small rural workshops making a whole range of equipment, some for agriculture (handtools, equipment, agro-processing, water lifting) and diversified lines (furniture, gates, fences, satellite dishes, ovens)



What is generally agreed?

- Engage the private sector
- Avoid “donations” of equipment
- Ensure that the mechanized operations can be profitable

But there is no blue print or master plan as to how to do this.....

Or could one be developed??

– **Yes we can!**



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Agricultural Mechanization Strategy Formulation

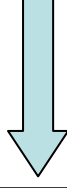
- Concept
- Key points
- Countries in Africa with AMS activities



Agricultural Mechanization Strategy concept (I)



Users:
Farmers
...



Sub sector:
Retailers and Wholesalers
Manufacturers
Importers

The strength of the whole system depends on the effective functioning of all components and the linkages between them

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Agricultural Mechanization

Strategy concept (II)



Providing basic conditions for a largely self-sustaining development of the sub-sector of mechanization with a policy of minimum direct intervention



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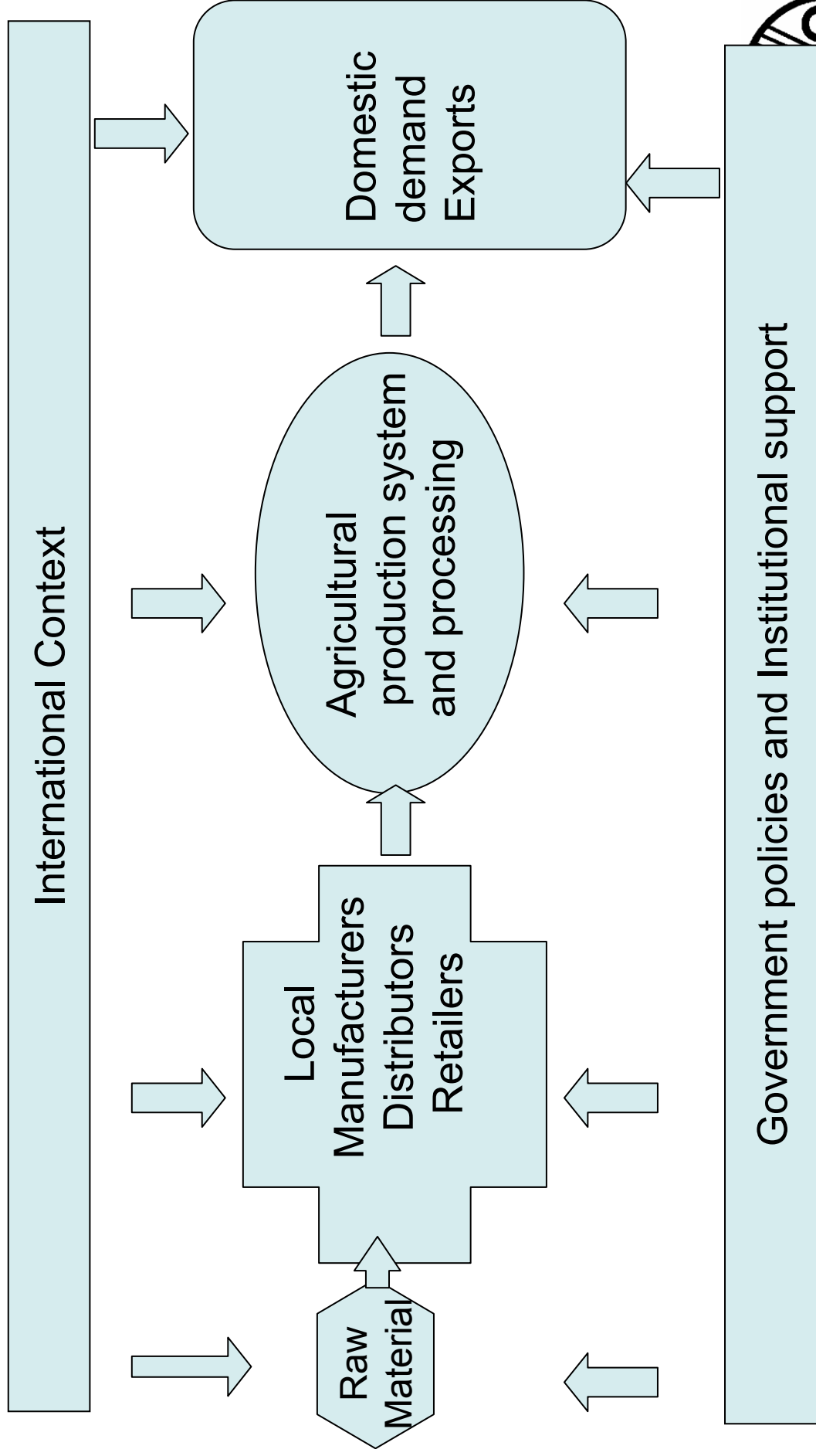
Agricultural mechanization strategy

Principles:

- Holistic
- Participatory



Agricultural mechanization system



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Agricultural mechanization system

AMS Stakeholders

Mechanization demand

- Smallholder farmers
- Commercial farmers
- Farming organizations
- Irrigation groups
- Crop processors
- Rural transporters

Mechanization supply

- Importers
- Retailers
- Manufacturers
- Blacksmiths
- Distributors
- Machinery support services
- Contractors

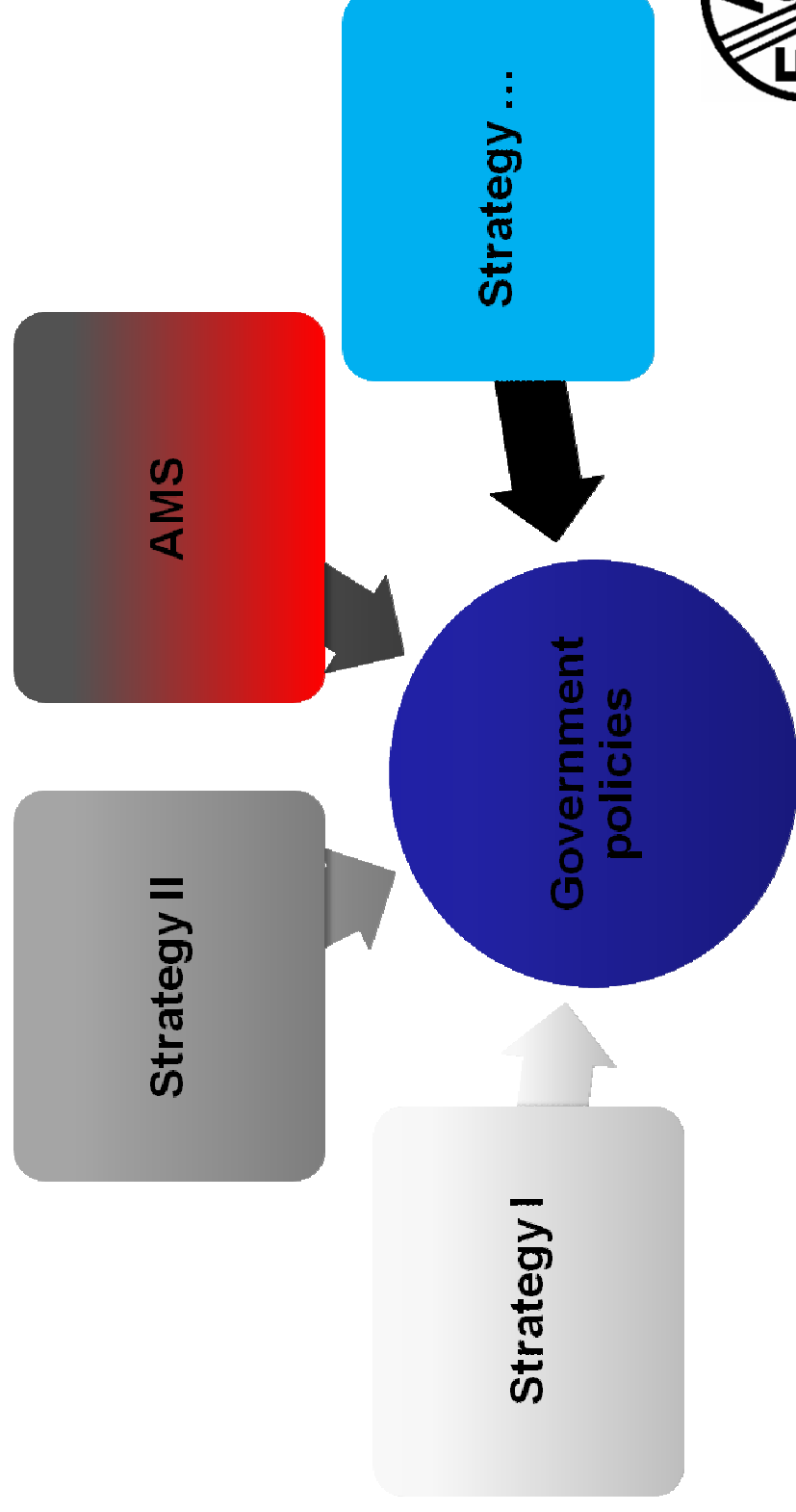
Institutional support

- Financial Institutions
- Government
- NGOs:
- Extension/ capacity building
- Research
- Policy makers



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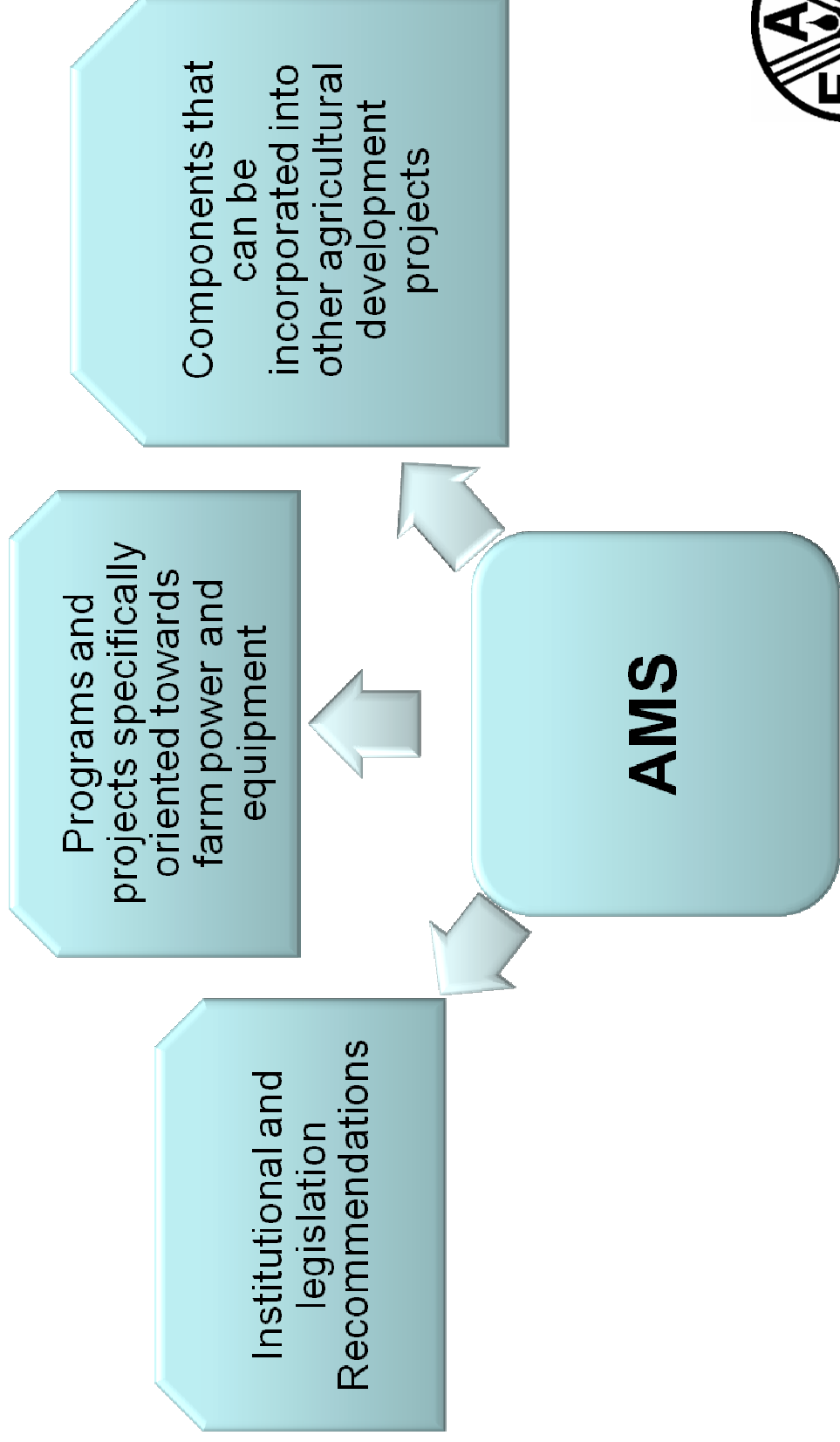
The role of an agricultural mechanization strategy



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The role of agricultural mechanization strategy



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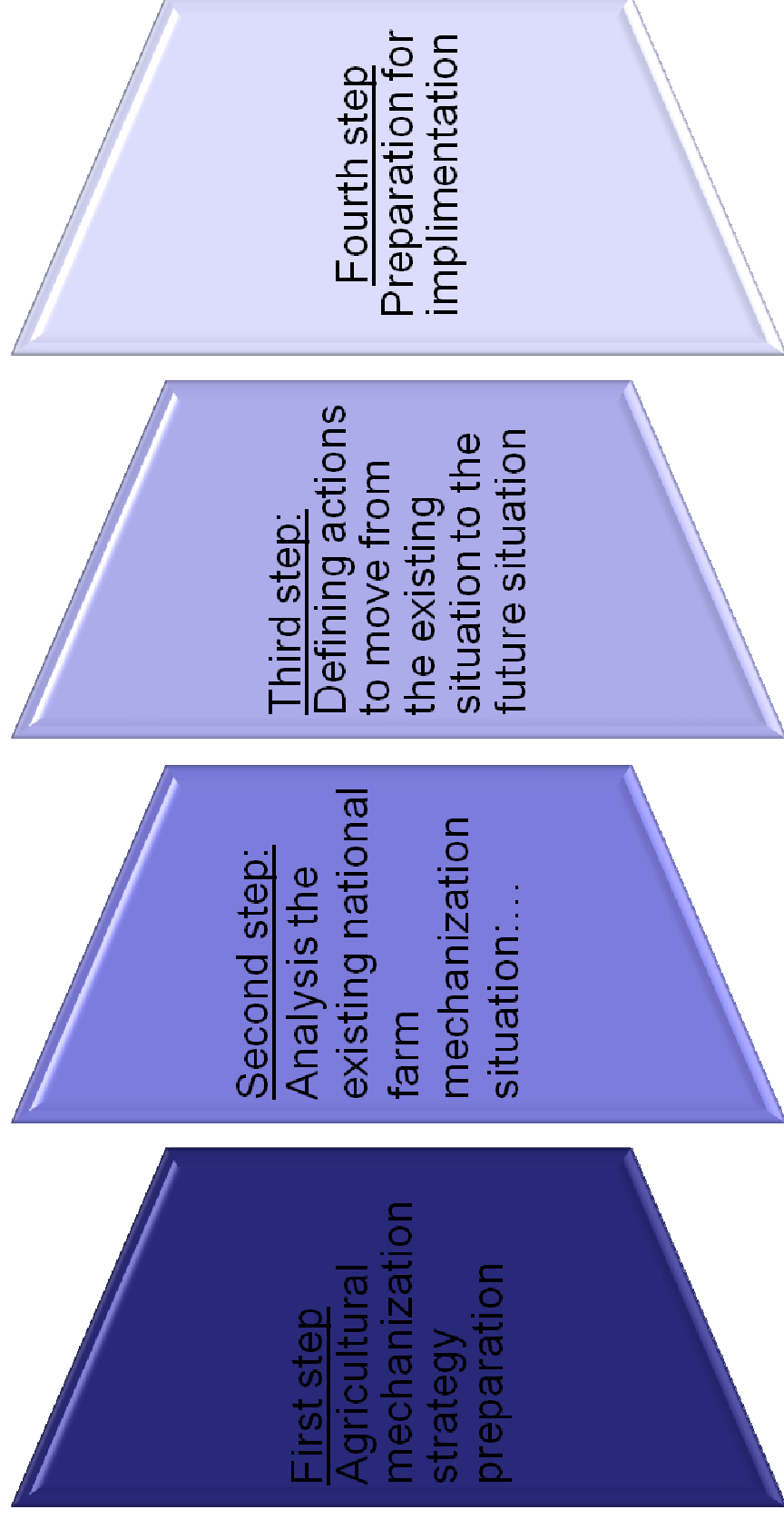


Pre conditions

- Agricultural mechanization strategy must derive from a real felt need expressed by policy decision makers
- There also needs to be skilled personnel and sufficient funds to prepare the strategy, producing results within a reasonable time frame.
- Other sectors have to be considered (be inclusive)



Main steps of AMS



Agricultural Mechanization Strategy process



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Preparation step : critical points to be considered

- Project Coordinator: plays a very vital role in the success of the AMS project and in implementation
- Project Team: an AMS needs a multidisciplinary team with analytical skills and experience in macro and micro economics, farming systems, agricultural engineering, manufacturing, agribusiness and enterprise development, policy and institutional reviews, and the private sector
- Steering Committee: to be established with the responsibility for overseeing strategy preparation. Committee members would include senior representatives from relevant ministries, such as agriculture and industry, and the private sector. The committee can also provide the vital link between strategy preparation and the on-going activities of implementation.



Example: Niger

Planning activities project (2009)

Activities	March	April	May	June	July	August	September
Diagnostic							
Participatory workshop							
Strategy Formulation and action plan							
Final workshop							



Methods and tools to be used

- Participatory workshops



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Methods and tools to be used

SWOT Analysis

	Strengths -..... -..... -.....	Weaknesses -..... -..... -.....
Opportunities -..... -..... -.....	Strategy elements for <u>short term</u>	Strategy elements for <u>medium term</u>
Threads -..... -.....	Strategy elements for <u>medium term</u>	Strategy elements for <u>long term</u>



AGS/AMI support to AMS in Africa

- **AMS formulation underway in:**
 - **Cameroon** (AMS strategy document just finalized)
 - **Niger** (AMS strategy formulation in final stage)
 - **DR Congo** (AMS strategy document under review)
 - **Morocco** (AMS formulation phase on-going)
- **AMS under implementation:**
 - **Tanzania** (integrated in Agricultural Sector Development Strategy, - ASDS)
 - **Mali** (implementation approach differs from AMS formulation)
 - **Benin** (focus on post harvest/processing)
 - **Ghana** (without FAO involvement)
 - **Zimbabwe** (delayed due to political/economical instability)

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Many thanks



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