



Issues

Technical Issues

- **Changing source of farm power:**

- Rapid change from animate (animal and human) to mechanical power
- Increasing use of 2WT/4WT,
- Increasing use of irrigation pumps (diesel/electric, **renewable energy-additional environmental and social benefits**),
- Increasing use of post-harvest & processing equipment

- **Transforming Land Preparation and Crop Husbandry Practices**

- Land preparation in most countries in near future, is likely to remain the same in a significant part of the cultivated land
- Amidst rapid changes in the sources of farm power, conventional tillage and planting techniques are likely to continue to dominate the

Technical Issues

- **Increased usage of ICT in machinery**
- **Increased use of mechanization in harvesting and on-farm post-harvest operations** with the use of combine harvesters and mechanical threshers, etc.
 - Entrepreneurs offering these services across countries in the Region through custom hiring, contract farming arrangements etc.
 - **Equipment of appropriate size.**
 - **Technical know-how on equipment use**
 - Increased pesticide use, fertilizer use, monocropping (+ environment)

Technical Issues

- **Improving Agricultural Mechanization Engineering and Design**
- **Mechanization Across the Value Chain**
- **Research and Development**
 - Public sector initiatives are usually multi-sectoral, but poorly coordinated
 - Private sector have most serious R&D, some are by MNC branches, others are home grown local companies
- **Standards and Testing**

Still a long way to go towards regionally harmonized protocols that will enhance trade in Ag Machinery & Implements and consequent price reduction
- **Role of Manufacturers of Agricultural Mechanization Equipment**
- **Mechanization Services – Maintenance and Spare parts**
- **Water use efficiency**

Environmental Issues and Concerns

- **Land Degradation** - Accelerated soil erosion and soil compaction owing to inappropriate use of mechanization.
- **Overuse and inappropriate use & handling of chemical inputs**
- **Threat of Climate Change:**
 - Rice-based production systems in most developing Asian countries are highly vulnerable to climate change risks
 - Delta countries' i.e. Viet Nam and Bangladesh being most vulnerable to sea-level rise, floods and erratic weather
- **Desertification issues (case of Mongolia) within the context of cc.]**

Socio-economic and Institutional Issues

- **Role of Gender and Women Empowerment**
- **Youth Empowerment**
- **Small-holders and Farmer Organizations**
- **Manufacturing**

With a market of over US\$50 billion for agricultural machinery and regarded as a low cost manufacturer globally, the removal of non tariff barriers to trade in the region will contribute significantly to cost reduction

The Asia-Pacific Network for Testing Agricultural Machinery (ANTAM) has a role to play in facilitating standards and testing and manufacturing

- **Financing of Investments in SAM**

Credit and finance are critical for agricultural mechanization investments and so with SAM technologies

- **Cost of inputs**

Issues Cutting Across

- **Policy Support**
- **Capacity Building at the National and Regional Levels**
- **Technology transfer, Technical Support Services & Training**
 - Reluctance of private sector to get too involved in promoting SAM.
 - Capacity development curricula are static.
 - Knowledge transfer and ICT

Additional

- Define agriculture broadly - to integrate crops, fishery, livestock and forestry
- Value chain issues
- Specific info on fertilizer application
- Land development and soil conservation

Technical Issues

- Research and Development
- Standards and Testing
- Role of Manufacturers of Agricultural Mechanization Equipment
- Mechanization Services – Maintenance and Spare parts
- Water use efficiency

Review of expanded tech issues/ groupings

Integration of issues

New issues

Technical issues

Monitoring and evaluation

Risk management

Operators' safety issues

Crop husbandry practices

Transplanting and seeding

Fertilizer application and residue management

Post harvest and processing

Post harvest losses (quantity & quality)

Quality improvement of harvest

Engineering and design

Issues

Environmental Issues

- Land Degradation
- Overuse and inappropriate use & handling of chemical inputs
- Threats of Climate Change
 - Desertification (Mongolia)
 - Flooding of deltas

Socio-Economic and Institutional Issues

Cross-cutting Issues

- Policy Support
- Advocacy
- Capacity Building
- Knowledge sharing
- R&D
- Extension, Technology transfer, Technical Support Services & Training

- Role of Gender and Women Empowerment
- Youth Empowerment
- Small-holders and Farmer Organizations
- Manufacturing
- Financing of Investments in SAM
- Cost of inputs

Technical Issues - Agreed

- Changing source of farm power
- Transforming Land Preparation and Crop Husbandry Practices
- Increasing usage of ICT in machinery
- Improving Agricultural Mechanization Engineering and Design
- Mechanization Across the Value Chain
- Research and Development
- Standards and Testing
- Role of Manufacturers of Agricultural Mechanization Equipment
- Mechanization Services – Maintenance and Spare parts
- Water use efficiency
- Monitoring and evaluation
- Risk management
 - Operators' safety issues
- Crop husbandry practices
- Transplanting and seeding
- Fertilizer application and residue management
- Post harvest and processing
- Post harvest losses (quantity & quality)
- Quality improvement of harvest
- Engineering and design
- Energy efficiency (consumption)

Environmental Issues Agreed

- Land degradation
 - Overuse and inappropriate use & handling of chemical inputs
 - Threat of Climate Change
- Emmissions

Socio-Economic Issues Agreed

- Role of Gender and Women Empowerment
- Youth Empowerment
- Small-holders and Farmer Organizations
- Manufacturing
- Financing of Investments in SAM
- Cost of inputs
- Land tenure
- Risk management (insurance, etc.)
- On-farm value addition
- Data
- Subsidies and funding

Cross-Cutting Issues Agreed

- Policy support
- Advocacy
- Capacity Building
- Knowledge sharing
- R & D
 - Extension, Technology transfer, Technical Support Services & Training

Final Agreements on Strategy Document

- Agreement to include/consolidate issues in the four groups with Chapter 6 of the document.
- Circulation to participants in two weeks
- In principle agreement on document provided all inputs are incorporated into final document.
- Views of all participants to be reflected in final document.