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

- IncreasING usage of ICT in machinery
- echanization Engineering and Design

Issues

Value Chain

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

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

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

Cross-cutting Issues

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

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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.