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

- **Little change in land preparation and planting techniques**
  - 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
    Region
Technical Issues

- **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)
Environmental Issues and Concerns

- **Land Degradation** - Accelerated soil erosion and soil compaction owing to inappropriate use of mechanization.
- **Overuse and inappropriate use 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
- **Cost of inputs**
Institutional Issues

- **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

- **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
Institutional Issues

- **Technology transfer, Technical Support Services & Training**
  - Reluctance of private sector to get too involved in promoting SAM.
  - Capacity development curricula are static.
- **Mechanization of Supply Chains**
- **Financing**
  Credit and finance are critical for agricultural mechanization investments and so with SAM technologies.
Additional

- Define agriculture broadly - to integrate crops, fishery, livestock and forestry
- Value chain issues
- Increased usage of ICT in machinery
- Recognition of the Multi-functionality of agriculture (ES report)
- Desertification issues (case of Mongolia) within the context of cc.
- Specific info on fertilizer application
- Land development and soil conservation
• Financing schemes
• Lan
Thank you