

**Regional Consultation on
Achieving Sustainable Development Goals
through Science, Technology and Innovation**



**Current Status on Science
Technology and Innovation in
Myanmar**

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Ministry of Education
Myanmar**



Outline

- ❑ Growth Potential of Myanmar
- ❑ Legal Framework for STI
- ❑ Institutional Framework for STI
- ❑ Technology Assistance Program to SME
- ❑ SDG implementation in Myanmar



Country Profile



- Largest country in Mainland Southeast Asia and strategic geographic location
- Population over 52.92 million
- Fertile Land of 676,000 sq meter
- 48% of land is covered with forest and it has long coastline on the Gulf on Bengal
- Economic policy based on a market oriented system.

Major Economy



❑ **Agriculture and resources basedAgro-based Industries**

❑ **Major Industries**

agricultural processing;
wood and wood products;
copper, tin, tungsten, iron;
cement, construction materials;
pharmaceuticals; fertiliser;
petroleum and natural gas;
garments, jade and gems

❑ **Major Exports**

Natural Gas and minerals
Rice, Beans and Pulses
Teak and Hard Woods, Rubber,
Coffee, Gems, Marine Products



GDP by sector

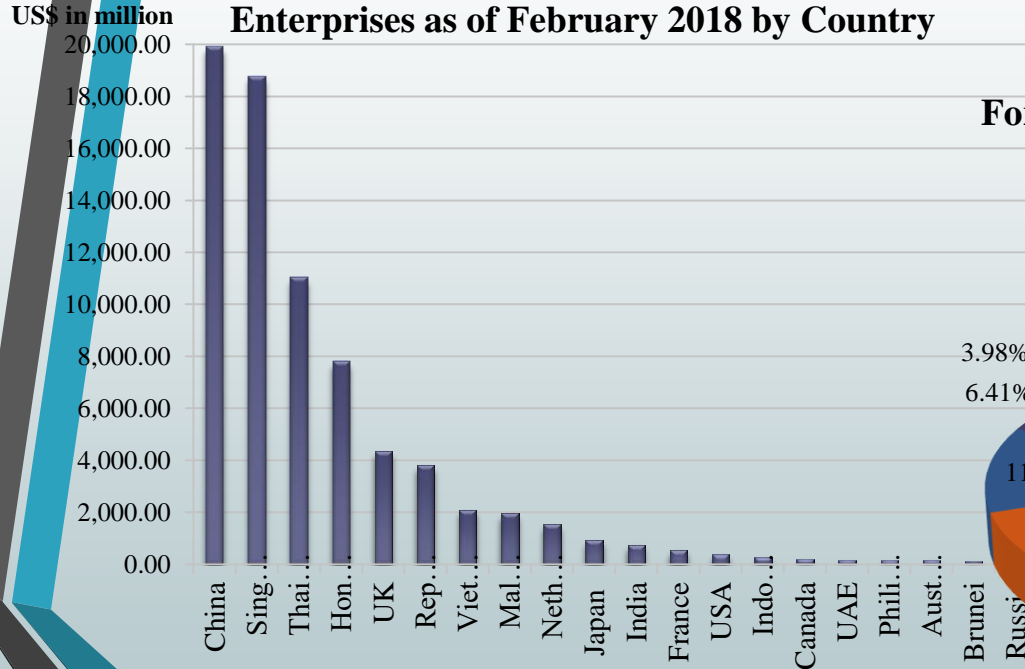
	2010	2016
Agriculture	37%	25%
Industry	26%	35%
Services	37%	40%

Foreign Investment Permitted Enterprises as of February 2018

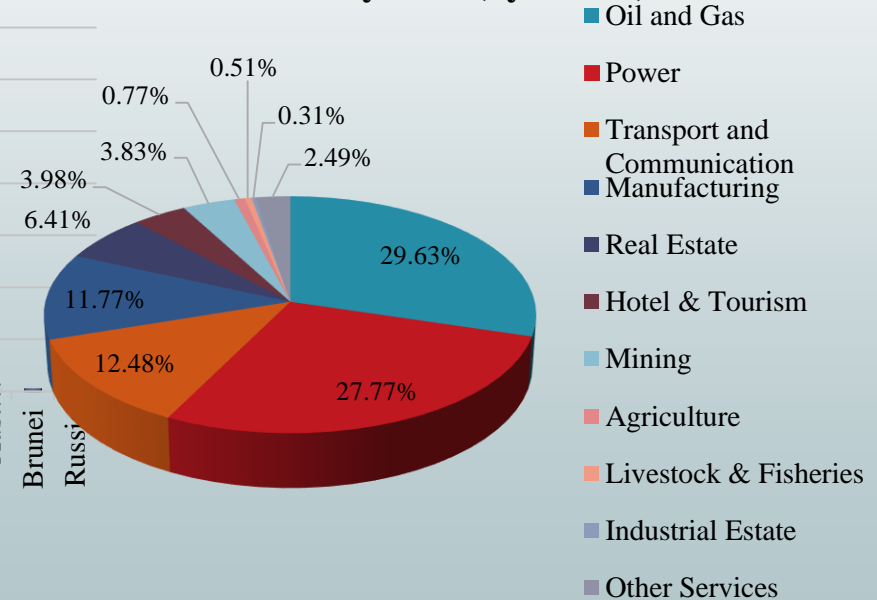


By Country and Sector

Foreign Investment of Permitted Enterprises as of February 2018 by Country



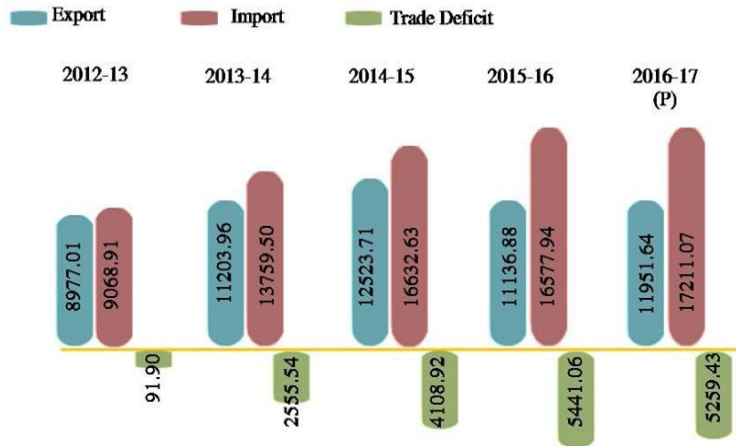
Foreign Investment of Permitted Enterprises as of February 2018 (by Sector)





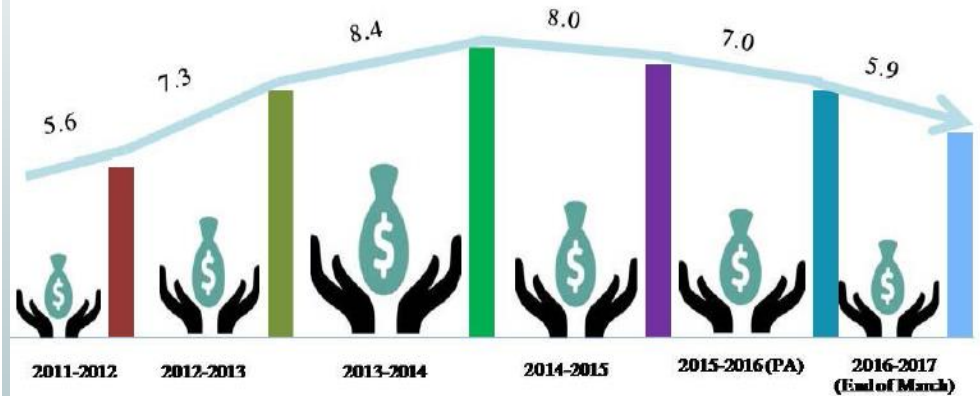
VALUE OF FOREIGN TRADE IN MYANMAR

(US \$ Millions)



Source : Customs Department
Information Unit : Central Statistical Organization

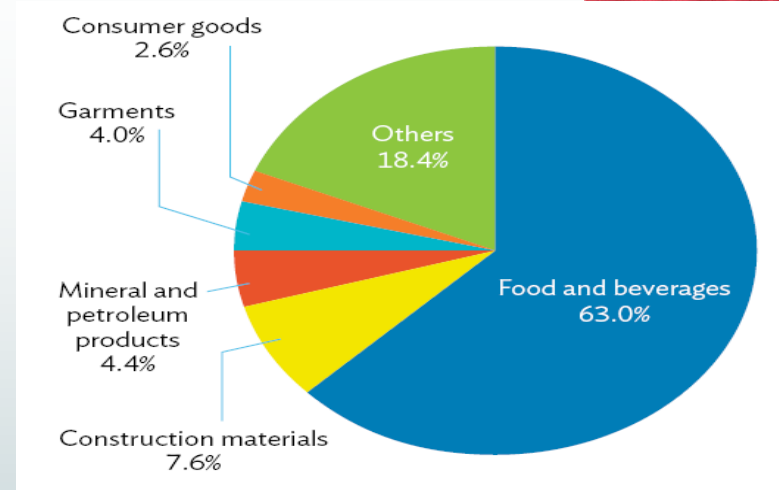
ANNUAL GROWTH RATES OF GROSS DOMESTIC PRODUCT



Myanmar SMEs



- ❖ Account for 50-95 percent of employment,
- ❖ Contribute 30-53 percent of the country's GDP
- ❖ 99.4 percent of business are SMEs
- ❖ Prioritized HRD, support for technical development and innovation, capital funding, better infrastructure, gaining a foothold in the marketplace, reasonable taxes & regulations, and the creation of suitable businesses

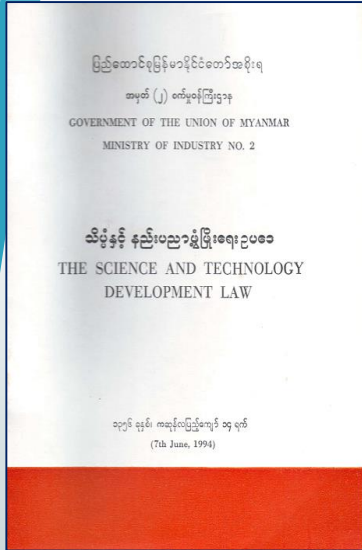


Weakness of SMEs



- Limited source of investment in SMEs sector
- Still need to upgrade the products quality standard for international market
- Difficulties in marketing, distribution ,connectivity, information & IT
- Inadequate level of management Skill & technology ; Innovation, R & D and Technology Transfer
- Low level of productivity
- Inadequate access to financing: Loan, Grant, Tax Concession, Fund, etc.
- Increasing global and regional competitions
- Limited Quality Infrastructure; Standards, Testing Laboratories, Certification, Accreditation, Quality Marks
- Lack of environmental awareness and knowledge

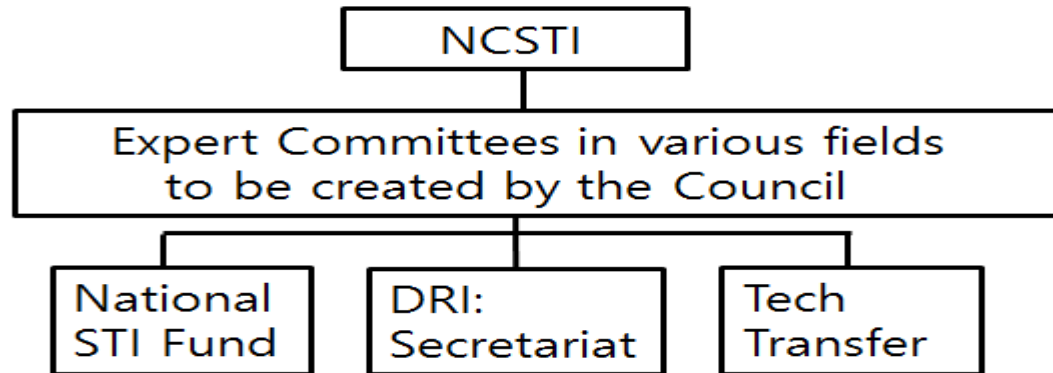
Legal Framework for Science Technology and Innovation



- ❑ The Science & Technology Development Law (June 1994)

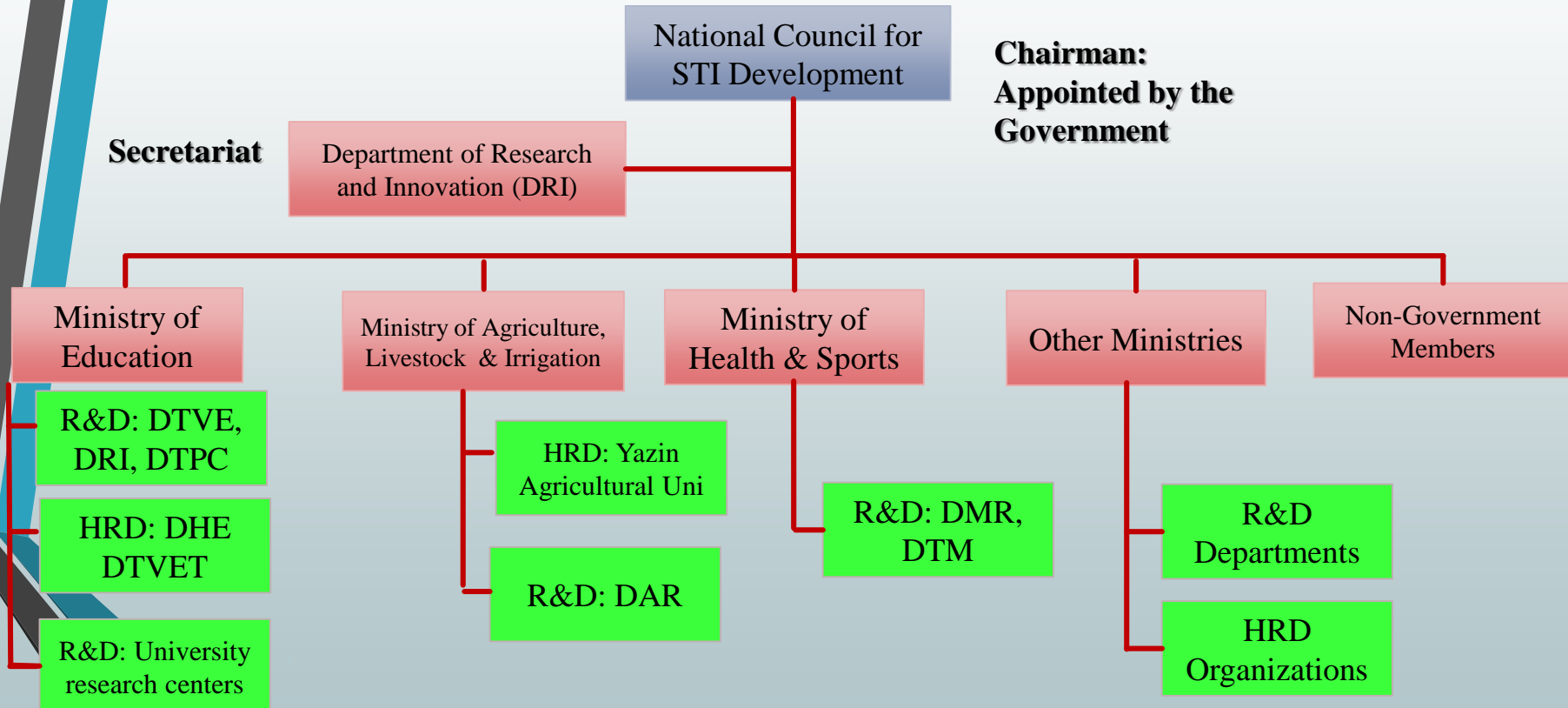
New legal framework:

- The new law on STI has been approved by House of Nationalities & House of Representatives and submitted to Assembly of the Union





Institutional Framework for STI





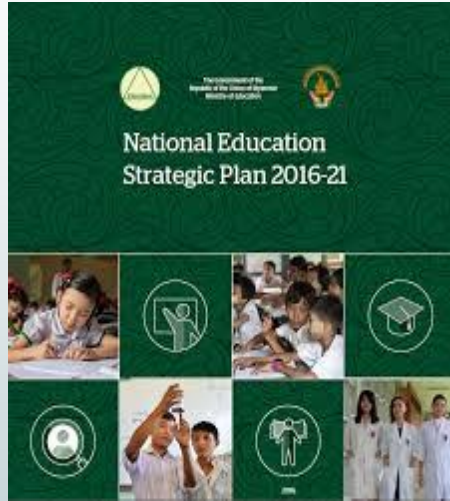
Focal STI Ministry in Myanmar

Ministry of
Science and
Technology
(October, 1996 –
March 2016)



Ministry of
Education
(April 2016- Date)

National Education Strategic Plan(NESP) (2016-2021)



• **Launched in February 2017**

• NESP Goal

Improved teaching and learning, vocational education and training, **research and innovation** leading to measurable improvements in student achievement in all schools and educational institutions

9 Transformational Shifts that will achieve the NESP Goal



Organization Structure



Ministry of Education

Department of Research and Innovation

Department of Higher Education

Department of Educational Research, Planning and Training

Department of Technical & Vocational Education and Training

Department of Basic Education

Department of Alternative Education

Department of Technological Promotion and Cooperation

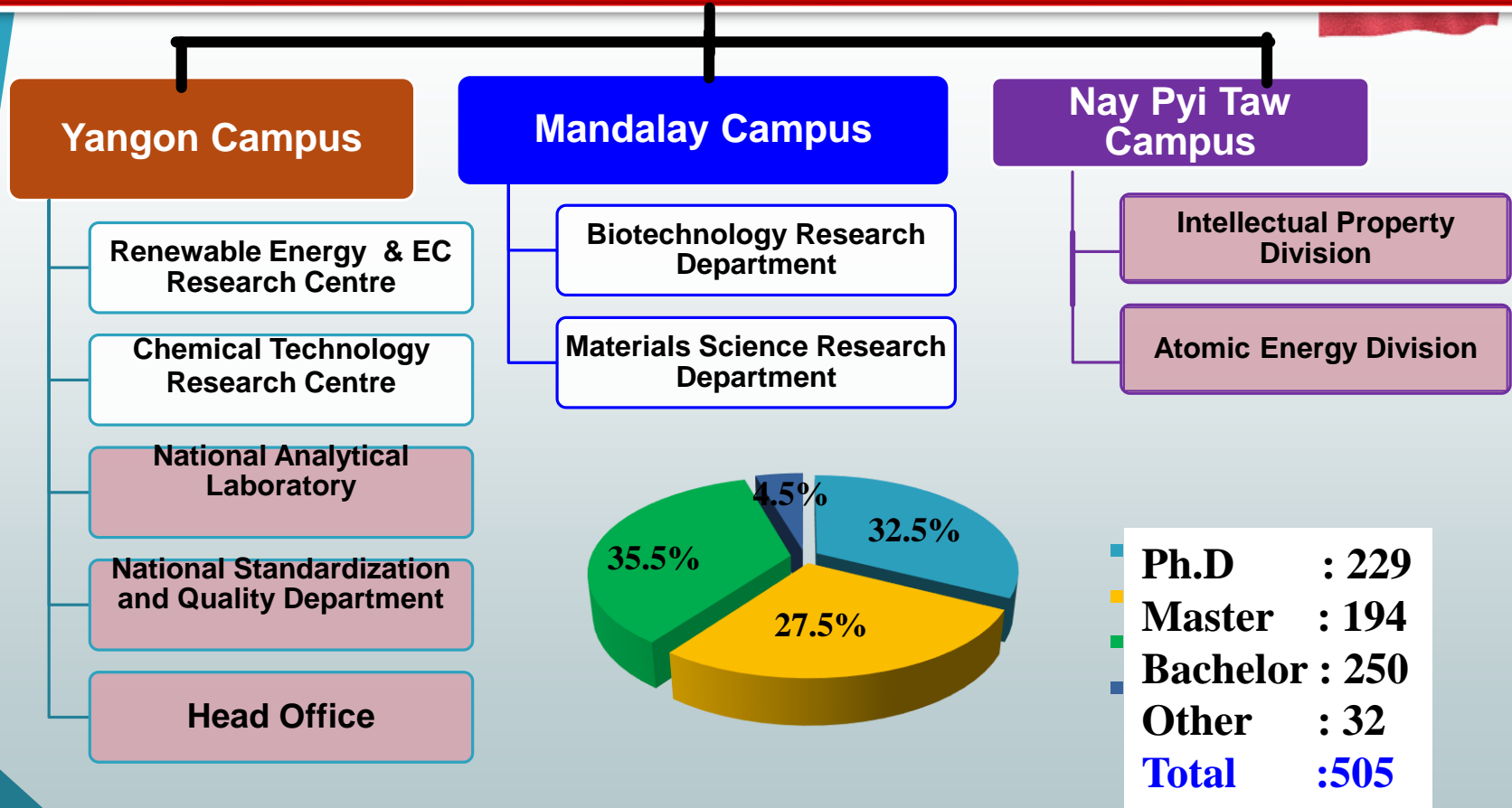
Department of Myanmar Examination

Department of Myanmar Nationalities' Language

Department of Monitoring and Evaluation (Education)

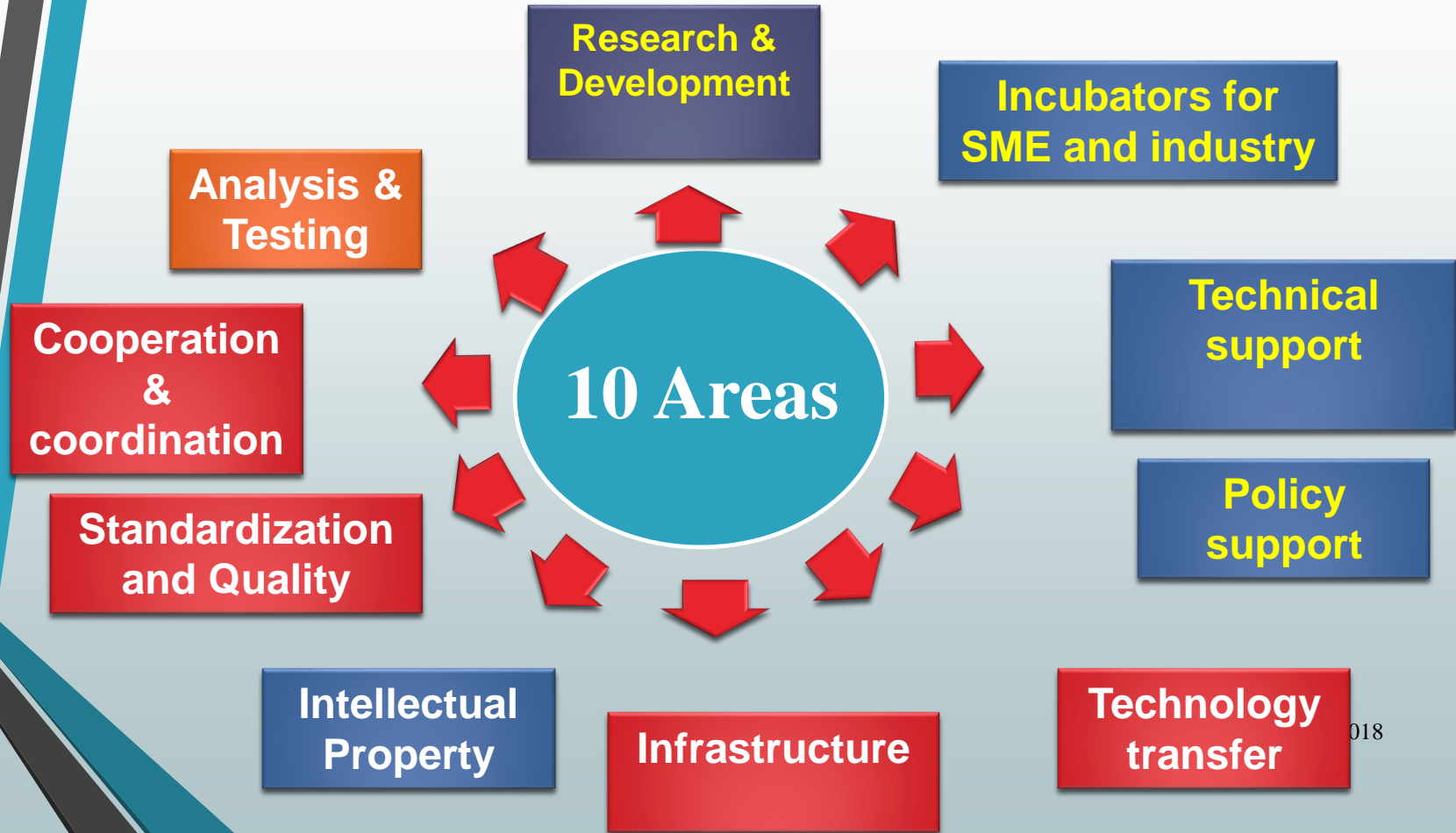
Department of Monitoring and Evaluation (Research)

Department of Research and Innovation (DRI)



DRI (MSTRD) was established by Law on Science and Technology Development (1994)

Assistance Program of DRI for SMEs Development





Successful Stories for Technology Transfer

Pilot Scale for Foaming Agent for Light Weight Concrete



Successful Stories for Technology Transfer

Recombinant Hepatitis B vaccine



In August 2006, WHO-GMP Standard Hepatitis B Vaccine Plant including most of the scientists, and technical staff, materials, machines and methods (Technologies) were handed-over to the Myanmar Pharmaceutical Factory, Ministry of Industry for large scale production of Recombinant Hepatitis B vaccine.

Five Traditional Drugs

The technology on the production of five traditional drugs was transferred to the Department of Traditional Medicine and to the Myanmar Pharmaceutical Factory, Ministry of Industry for mass production.

- Antidiabetic drug capsule
- Antiamoebic drug capsule
- Anti-hypertensive drug
- Anti-plaque, anti-inflammatory drug for gingivitis
- Purgative herb

Technology Assistance Program to Food SMEs (2016-2017)



- Demand based R&I
- Technical solution into Farms
- Technology transfer
- Training/ workshop/seminar



Technology Sharing to Food SMEs (18-11-2016)



- ❑ Coconut Jelly (Nata De Coco) , Vegetable seasoning powder
- ❑ Spaghetti sauce Formula
- ❑ UMFCCI, MFPEA, MCIA, SMEs Participants =150



Technology Transfer to Mango Association, Mandalay (12-14, May 2017)

- ❑ Mango candy
- ❑ Thazin Nwe Co. Ltd and Mango Association, Mandalay
- ❑ For export products

Nutrient Values	Yinkwal Mango (Ripen)
Vitamin C (ppm)	294.00
Vitamin A (ppm)	124.12
Fat(%)	0.049
Carbohydrate (+sugar)(%)	67.92
Fiber (%)	1.6
Protein (%)	1.9
Calcium (%)	0.06
Iron (%)	0.01



SME Development Program in States



Technology Sharing Program in Kachin States (26-6-2017 to 30-6-2017)



Technology Sharing Program in Chin States (20-1-2018 to 30-1-2018)

SWOT Analysis of Public R&D



Strengths

- ✓ Strategic geographic location
- ✓ Large, youthful population
- ✓ Rich in natural resources
- ✓ Abundant agricultural resources to be exploited for productivity improvement
- ✓ Growing food processing industry

Opportunities

- ✓ Potential of renewable energy
- ✓ Potential of investment in a range of sectors
- ✓ Greater interaction between multinationals and SMEs
- ✓ Scope for making public sector R&D more relevant to industry needs
- ✓ S&T parks and industrial parks
- ✓ Private sector initiatives in improved production and marketing can be scaled up

Weaknesses

- ✓ Inadequate infrastructure
- ✓ Absence of a strategic roadmap and master plan for STI
- ✓ Absence of R&D management organization
- ✓ No National research funding agency
- ✓ Weakness in plan to encourage R&D for SME development
- ✓ Weak linkage among Uni-R - I

Threats

- ✓ Growing competition from emerging ASEAN economies and China
- ✓ Inadequate incentives for innovation-friendly FDI
- ✓ Lack of adequate financial support
- ✓ Lack of capacity building, skilful workers and manpower shortage
- ✓ Lack of monitoring and evaluation on R&D system



Research Forum on Science and Technology (2-8-2017)



Research Forum on Science and Technology



- ❑ **Trend of Renewable Energy Development in Myanmar, Opportunities and Challenges**
- ❑ **Peaceful Applications of Nuclear Technology: towards Sustainable Socioeconomic Development**
- ❑ **Key partner for Private Sector through Research and Innovation**
- ❑ **Role of Electronic Technology and Innovation for Socio-Economic Development of the country**
- ❑ **Service Platform for Innovation and Trade Facilitations**
- ❑ **Colorful Biotechnology**
- ❑ **Toward Product Quality Promotion by means of standards and Conformance**
- ❑ **Analysis and Testing Service for Public**
- ❑ **Role of Intellectual Property in Innovation**

The 10th ASEAN STI Week (12-20 Oct 2017), Nay Pyi Taw



AMMST-17

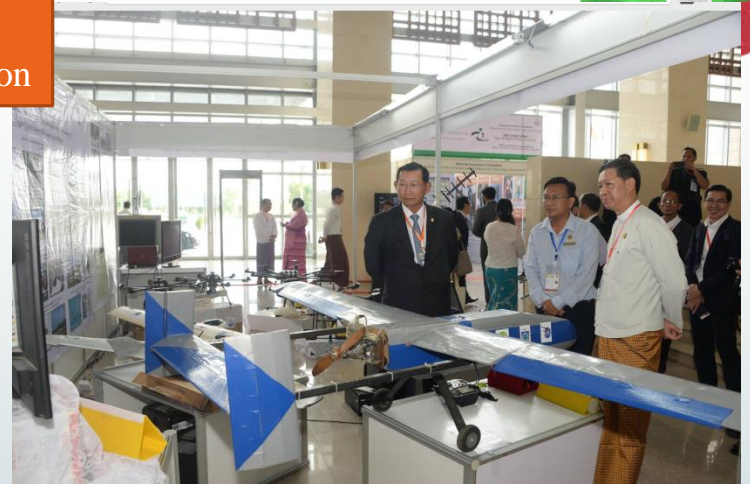


COST 73





ASEAN
STI
Exhibition



STI Conference



Sustainable Development Goals



Myanmar's SDG Priorities



Poverty

- Reduce overall poverty...
- (Sustainable agriculture, empowering people, primary health care)

Education & Health

- Quality Education for all, completion of secondary education for all, developing TVET education, Increase the number of adults participating and lifelong learning,
- Primary healthcare and well being

Employment

- Employment creation. Productive Employment. Promote decent work, Increase Youth & women Empowerment

Energy and Infrastructure

- Affordable Energy, Developing rural energy and transportation, improving stable electricity access...

Environment & Disaster Resilience

- Build Disaster Resilience and prevent climate change, Reforestation, Disaster Preparedness, Ensure Access to safe drinking water and sanitation

Governance

- Increase access to justice, Corporate governance, Developing managerial and leadership skill, Institutional strengthening, Anti bribery and corruption..

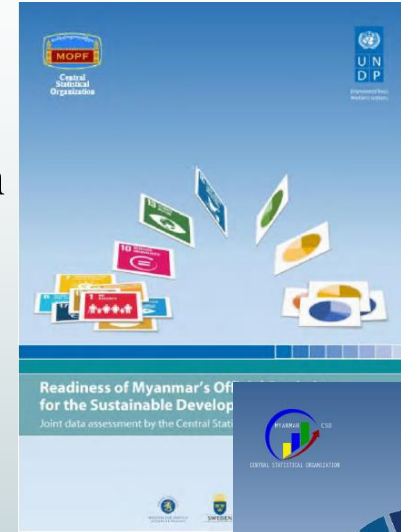
Global Partnership

- Aid effectiveness, Aligning national needs and priorities, Promote better statistics for development methodology, concept and definition, Policy coherence, Providing technical and financial support

SDG implementation in Myanmar



- ❑ Development Policy of Myanmar is people centered, inclusive and sustainable.
- ❑ The twelve points of the economic policies also support to the implementation of SDGs in Myanmar.
- ❑ Ministry of Planning and Finance assessed Myanmar's Data availability for the measurement of the SDG indicators
- ❑ Data Assessment Report and Baseline Indicator Report were published
- ❑ Myanmar Sustainable Development Plan(MSDP) has been drafted in line with the SDGs.



Challenges



- ❖ Myanmar has to enhance Coordination Mechanism to coordinate key govt. S&T Ministries, R&D institutions and SMEs
- ❖ Limited fund to support in research and development, human capital development, public-private partnership
- ❖ Linkage of research and innovation policy to National socio-economic development plan
- ❖ Streamlining SDGs concept in National Comprehensive Development Plan: Sectoral plus Regional Plans
- ❖ Awareness and education: help to create the critical awakening needed to mobilize the public for the achievement of the SDGs.
- ❖ To encourage innovation in the form of grants, R&D funds, award, tax concession and special privileges to those SMEs that show enthusiasm and ability in R&D;
- ❖ SME supporting innovation system
- ❖ To establish and encourage linkages among universities, R&D centers and technology incubators;

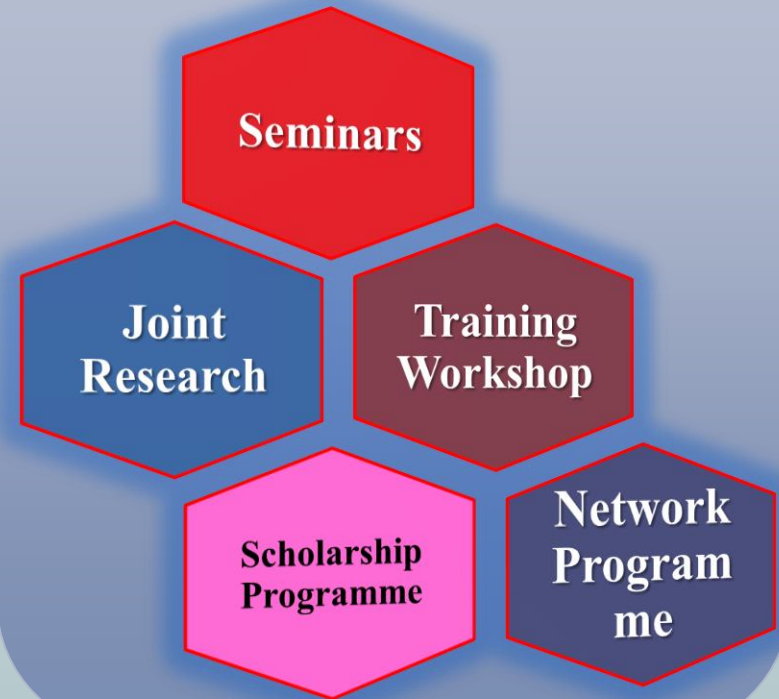
Cooperation Demand to address STI Challenges



Expected fields for Cooperation

- ❑ Research and Innovation Policy
- ❑ Establishment of Incubation Center
- ❑ Technology Transfer and Commercialization
- ❑ SME supporting innovation system
- ❑ Talent Mobility, R&D Collaboration Program

Ways of Cooperation





Conclusion

- ❑ Myanmar looks forward to the strengthened cooperation and collaboration with the regional & international community and relevant development stakeholders including Members of the Parliament , Private Sector, NGOs and INGOs to assure the SDGs' Concept of "No One Left Behind" in the implementation of the SDGs, and to strengthen the development of STI.



**Looking forward Closer
Cooperation**

**Thank you for your kind
attention!**