

Asian and Pacific Workshop on Whole-Process Mechanization of Potato Production

Country report presentation

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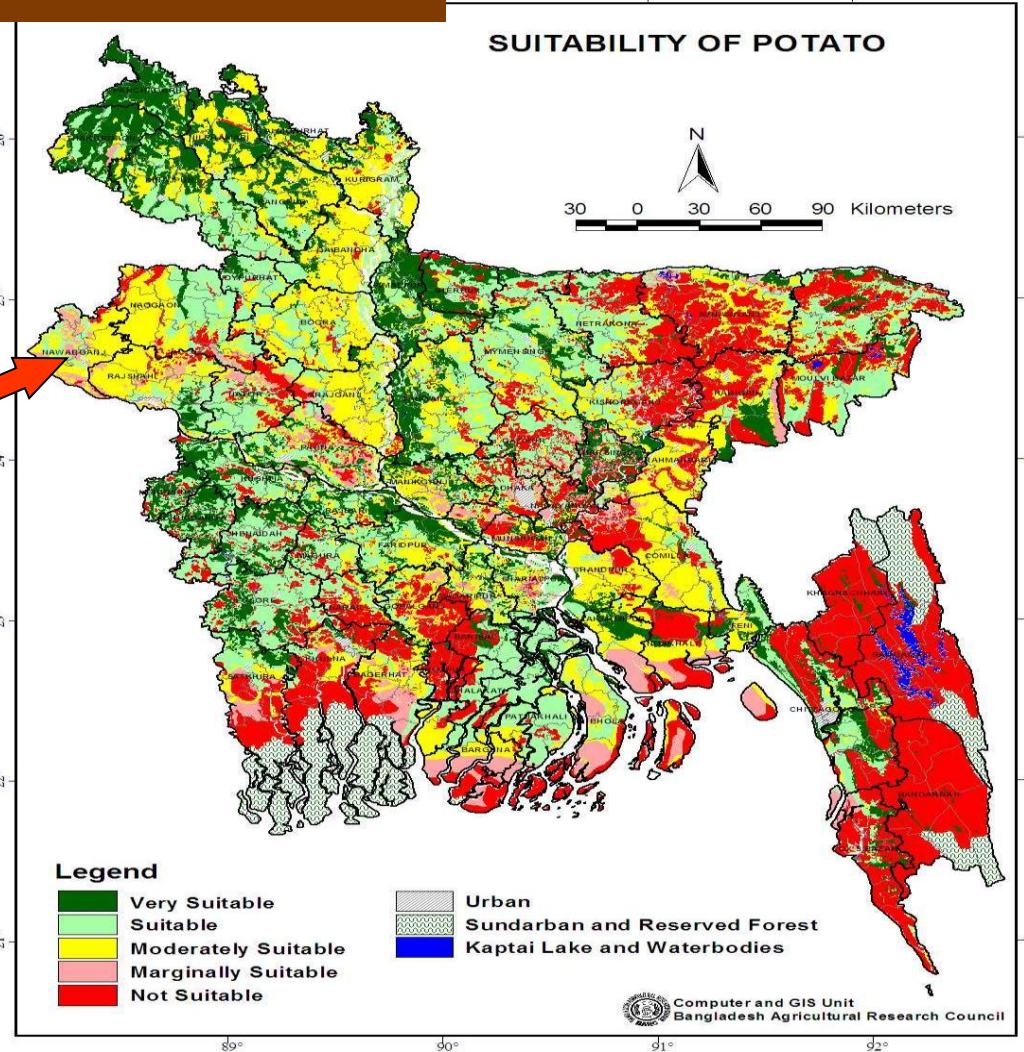
27-28 June 2016, Kunming, China



CSAM



BANGLADESH



Between 20034' and 26038' north latitude and between 88001' and 92041 east longitude

Outline

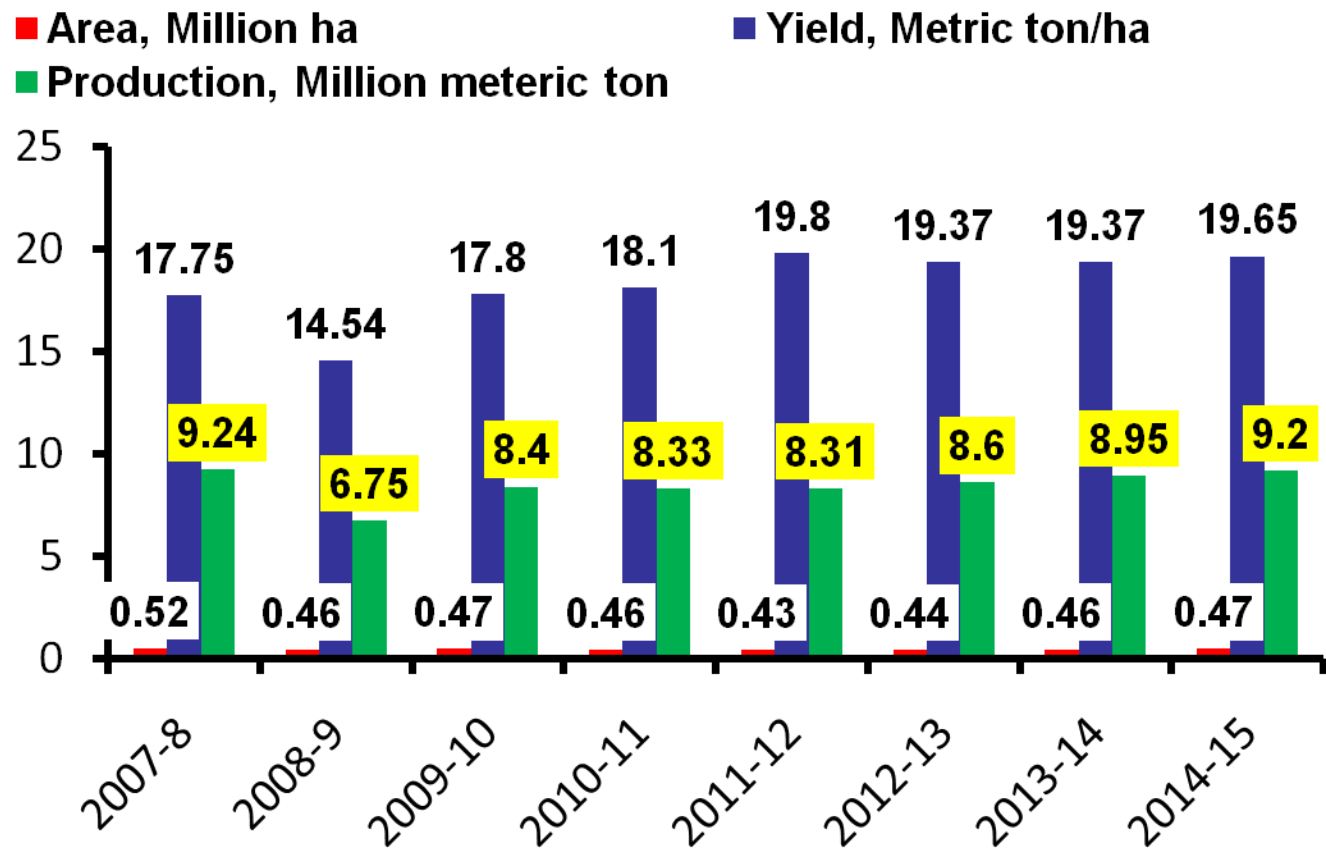
1. **Overview of potato supply chain in Bangladesh**
2. **Status of mechanization in potato production**
3. **Potato machinery developed in research institute**
4. **Need assessment of potato production mechanization in Bangladesh**
5. **Major constraints and challenges**
6. **Suggestions for regional cooperation for whole-process mechanization of potato**
7. **Conclusion**

Overview of potato supply chain in Bangladesh

• Potato growing period:
Mid Oct-mid march

• Avg. temp: 15-25^oC

• Cropping system:
Rice-potato-maize



- Potato variety : Developed by Tuber crop research centre of BARI; about 70 nos
- Seed source : Quality seed 5% ; 95% low quality by farmers produced
- Number of potato cold storage: 382 ; storage about : 25-30%
- Generally farmers sold potato in local market
- Potato exporting 8-10 countries through private sectors

Status of mechanization in potato production in Bangladesh



Power tiller: 12-16 Hp



40-55 hp

Name of machinery	Numbers of machinery	Remarks
Power tiller	700,000	Multipurpose use in addition to soil tilling
Four wheel tractor	35,000	Custom hire use
Shallow tubewell	1549711	Groundwater as well as surface water pumping
Deep tubewell	203741	Ground water irrigation
Sprayer	13,00,000	Mostly knapsack type
Diesel engine	25,00,000	Agricultural activities

Potato machinery developed in research organization (BARI)

1. Power tiller driven potato planter
2. Power tiller driven potato harvester
3. Potato grader

Adoption rate very slow due to weak extension, no mechanization policy

BARI Power tiller driven Potato Planter



Power tiller driven potato planter



Conventional planting



Planting uniformity, 93%

Cost comparison

Cost item	Potato planter	Manual planting
Labour requirement	4 man days/ha	67 man days/ha
Potato planting cost, Tk./ha	7,054	26,400

1 US \$=Tk. 78.0

Cost saving: 73% , Labour saving: 94%; Capacity: 0.10 ha/hr

BARI Potato Harvester



Power tiller driven potato harvester



Conventional harvesting

Cost item	Potato harvester	Manual method
Labour requirement	21 man days/ha	60 man days/ha
Cost of potato harvesting, Tk./ha	8,357	17,100

Cost saving: 51% , Labour saving: 65%, ;Capacity : 1.2 ha/day

Need assessment of potato production mechanization in Bangladesh

SI No.	Name of potato machinery	Numbers needed	Suitable potato growing districts of Bangladesh
1	Small Potato Planter	2000	Munsigonj, Rajshahi, Joypurhat, Bogra, Rangpur, Dinajpur, Nilphamari, Lalmonirhat, Jessore, Panchagore, Thakurga, Comilla
2	Small Potato Harvester	2000	
3	Power duster cum sprayer	10,000	
4	Potato grader	5000	

Major constraints faced for whole process mechanization of potato production in Bangladesh

- **Lack of appropriate small potato planting and potato harvesting machinery suitable for small fragmented land with farmers affordable price.**
- **Potato produced price are not stable which discourage farmers on capital investment**
- **Inadequate number of skill machinery operator and mechanic in rural areas.**
- **Machinery manufacturers are not technically sound on potato machinery**

Major constraints contin.....

- **Credit support on agricultural machinery are not much friendly**
- **Policy of mechanization needed (Such as- subsidy on agricultural machinery with farmers easy access on it)**
- **Inadequate fund allocation for machinery research and potato- mechanization to farmers**

Major challenges for whole process mechanization of potato production in Bangladesh

- How to introduce small potato planter and potato harvester in the farmers' field and how can make these machinery available to farmers with affordable price?
- How to link potato machinery with dealers, manufacturers, agri-business personnel?

Suggestions for regional cooperation for whole-process mechanization of potato production in Asia and the Pacific, and potential contribution

- **Formulation of sustainable mechanization guideline as well as potato mechanization network and implementing the strategy to the farmer's field.**
- **Introduction and interchanging suitable potato machinery among the region with fair price.**
- **Policy for easy way marketing the produced potatoes among the region.**
- **Capacity building of the farm machinery engineers, manufacturers, machinery operator, and progressive farmers in respect of potato machinery and mechanization.**

Conclusion

- **Introduction of small potato machinery can mitigate labour shortage and make steady progress of potato production**
- **Need policy guideline among the region of potato mechanization and implementing strategy easy way to the farmers field**
- **Capacity building of the stake holders related to potato mechanization to be undertaken**

Speaker contact information

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A wide-angle photograph of a lush green agricultural field, likely a soybean field, stretching towards a distant treeline under a pale, overcast sky. The foreground is filled with dense, vibrant green plants. In the background, a line of trees, including palm trees on the left and taller, thinner trees on the right, marks the horizon. The overall scene is peaceful and rural.

Thank you