



Some Examples from Pakistani Agriculture

**3rd Annual IFPRI / PSSP Conference
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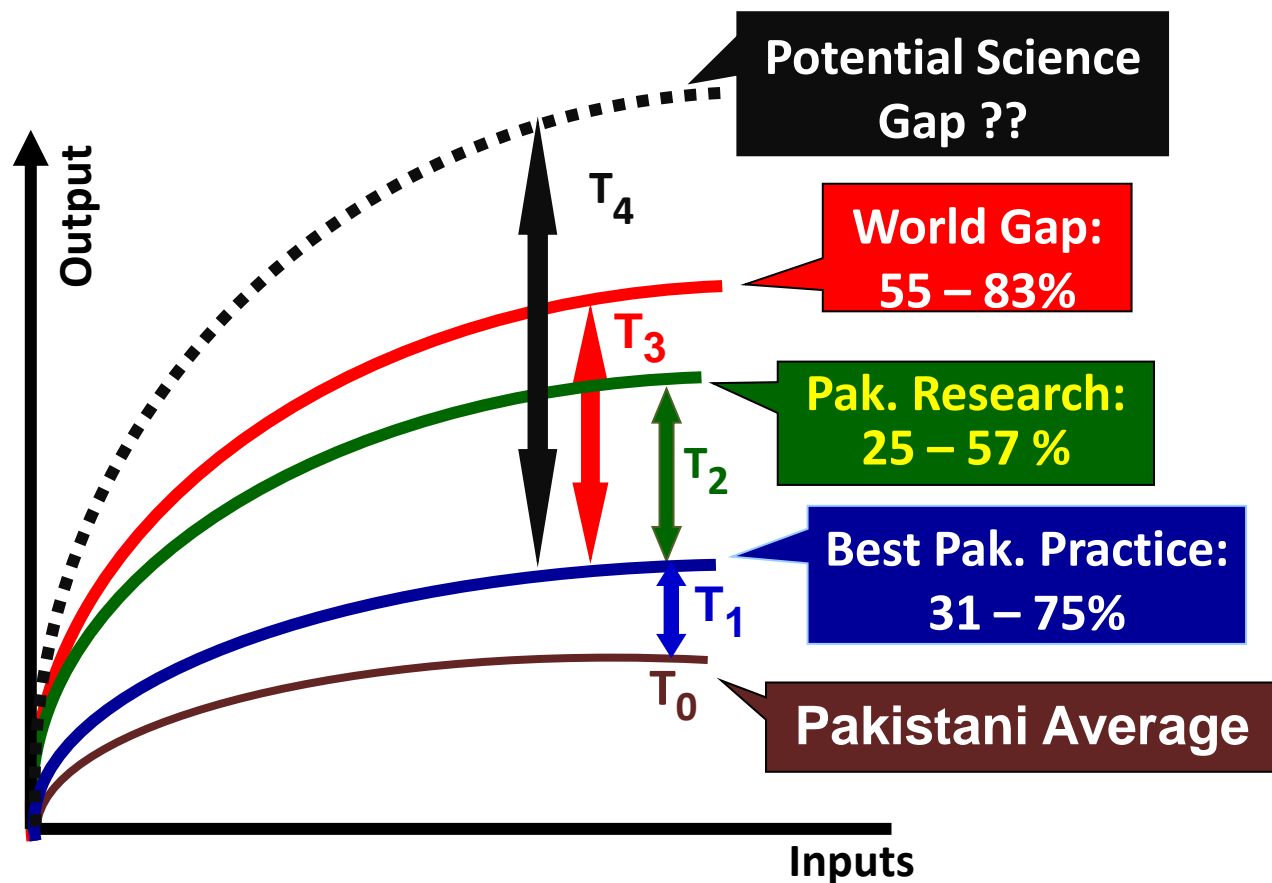
**Dr. Shaukat Hameed Khan
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Technology Gap for Pakistan's 5 Major Crops

“Green Revolution” is essentially over.

- High Growth Rates in Agriculture , will not be sustained through current technology, practice & attitude alone





Water ...

Cropping Intensity is now **~160%** vs **75%** planned under the Indus Basin treaty

Low Water Storage

- 9/10 Circulation Models for Climate Change Predict Higher Precipitations (20% more) in Pakistan
 - **More Dams;** Higher Dams; Basin management
- Pakistan Exports a lot of Rice! **Actually Export Water!**
 - **Water Budgets?**

Have fed our people most of the time even with population up 6 times since 1947

- Wheat & Cotton and Rice ... New seeds
- SUPARCO & Crop Estimation



Examples of Agricultural Technology

Laser Land Leveler from
the Laser Labs, Islamabad
Over 1200 sold



Result ;

- 31%-37% Less Water
- Uniform Fertiliser Intake
- Yield: Up by 16-18%

➤ **Bio Diversity:
'Gene' Banks
Established**

Reducing High Wastage in Farm Produce:

- **Food Irradiation Plant Lahore; Capacity of 50,000 tons/year**
 - **Enhanced Shelf Life: 6 months for Potatoes / Onions**
 - **18 days for Ripe Mangoes *PLUS* SPS Conformance**



Energy Potential from Biogas Plants

Dairy Sector (Livestock Census, 2006) : Large

165,000 Farms / House Holds > 20 + Cattle <

40,000 Farms / House > 50 + Cattle <

Farm	No. of Cattle	Digester Size	kWh + M ³ Thermal	Cost PKR (m)	IRR (%)	Pay Back (years)
Hamidpur Multan	144	175	96+ 18	1.35	42	2.37
Nestle Sukheki	129	200	73+ 6	1.75	37	2.68
Simly Islamabad	143	250	88+ 2	2.18	31	3.2
Sial Farm Jhang	144	100	28+ 5.5	0.78	31	3.2

Carbon Revenue:

Contribution for Sustainable Financing of Biogas Plants



Other Issues in Agriculture

Need to Focus on Women : Over 75 % of rural work force

Livestock : Important source of cash

Biodiversity: GM crops !

The Honey Bee transported in trucks across N. America!

Land Reforms