

From Agricultural Research to Agribusiness by Factor Cⁿ :
Capability, Capacity and Competency ... Context, Culture, Conscience,
Conscientiousness, Commitment, Creativity, Courage, Communication,
Consensus, Connectivity, Catalysts, Coaches, Cooperation, Coordination,
Coherence, Continuance, Countability, Capital, Convenience, Customers, ...

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Global Symbol for Capacity Building

Between 2015 and 2050 more than a doubling of crop production, a tripling of plant based protein production (food & feed), and a tripling of fruit and vegetable production is necessary to feed 9.3 billion people living on earth.

Africa's population set to double by 2050, but crop production will not. The challenge is: How much improvement in agricultural production will be enabled and how much food has to be imported – at which price?

Nowadays, millions of farmers still work with obsolete agricultural technologies. Consequently, e.g. agricultural losses across the food value chain in Sub-Saharan Africa are 19% for staple crops, 28% for cash crops and 52% for horticulture (*UN, 2017*).

“The low agricultural productivity in poor countries is not due to poor land endowments. These seem like sizeable unrealized gains in productivity. Efficiency improvements in developing countries could dramatically boost crop yields by factor 5” (*Adamopoulos and Restuccia, 12/2017*).

Furthermore, rate of returns per year to food and agricultural R&D investments worldwide are 139.5% for applied research, 42.9% for basic research, and 72.2% for extension service (*Hurley et al., 2016*). Consequently, R&D investments are very profitable and promising.

Today and in future, agricultural innovations, entrepreneurship, capacity building and technology transfer of appropriate and socially adaptable technologies are and will be key essentials for the improvement of agriculture and food industry in developing countries. Nevertheless, it has to be considered, that technologies are parts of the solution, but technologies alone cannot solve the problem of global hunger and poverty.

Furthermore, since centuries it is well known, that “technology transfer in itself will not lead to economic growth. A successful transfer of technologies can occur only, if the recipient is sufficiently capable of maintaining an introduced production system. Without this capability, it is difficult to modify or improve agricultural production systems” (*Madu, 1989*).

A Vision named: “**From Agricultural Research to Agribusiness**” reflecting “**Factor Cⁿ**” (“**CCCC CCCC CCCC CCCC C...**”): **Capability, Capacity and Competency - Context, Culture, Conscience, Conscientiousness, Commitment, Creativity, Courage, Communication, Consensus, Connectivity, Cooperation, Coordination, Coherence, Continuance, Countability, Capital, Convenience, Customers**, will be given for students, scientists, university faculties, agriculture colleges, school teachers, extension personnel, private sector, private sector advisers, small and medium enterprise owners, farmers, NGOs, policy makers, media, and the public at large.

By pressing the techno-cultural innovation forward in agriculture through appropriate technologies by creative and responsible scientists, the changing world will be able to address the Vision: “**Factor Fⁿ**” (“**FFFF FFFF FFFF FFFF**”): **Future Farming, Food, Feed, Fitness, Fuel, Fiber, Flowers, Freshwater, Fishery, Forestry, Flora, Fauna, Fun, Fortune, Freedom**, which are milestones on a roadmap for tackling the challenges of the 21st Century (*Kern, 2010, 2012*).

The all over all key challenges ahead of all stakeholders should be kept in mind: “We have to deliver “values” in time to farmers, agricultural production systems, to the society and the environment!

Last, but not least: “If I have the belief that I can do it, I shall surely acquire the capacity to do it even if I may not have it at the beginning” (*Mahatma Gandhi, 1869-1948*).