Farm round-2016

Cambridge

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Why the Drylands?

Drylands are huge areas globally. Covers 55 countries, over 1/3 of global population.

2.5 billion people live in the drylands.

1/3 of the people depend on agriculture.

Drylands are home to many of the poor:
- Poverty, food insecurity, frequent drought and environmental degradation are widespread.
- Rapidly growing population, high urbanization, highest unemployment rate, conflict prone due to breakdown of social systems.

644 million people poorest of the poor.

27% of children in sub-Saharan Africa are malnourished.

42% of children in the drylands of Asia are malnourished.

10% increase of dryland areas of the world with climate change.

Climate change is making the drylands a tougher environment to develop and survive:
- Access to water becoming even scarcer.
- Global climate in sub-Saharan Africa will be drier and hotter.
- More variability and occurrences of short periods of extreme stresses (drought and heat) during the crop growing season.

Source: ICRISAT - International Crops Research Institute for the Semi-Arid Tropics
A model for nitrate allocation in plants

Li et al., Plant Cell, 2010
Stress tolerance

Plant growth

Cellular activities

Stress tolerance

Nutrient acquisition and allocation

Plant