- **Impact of climate change on Agriculture and Food security in CKNP Area Gilgit Baltistan.**

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Outline of presentation…

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1	Gilgit Baltistan
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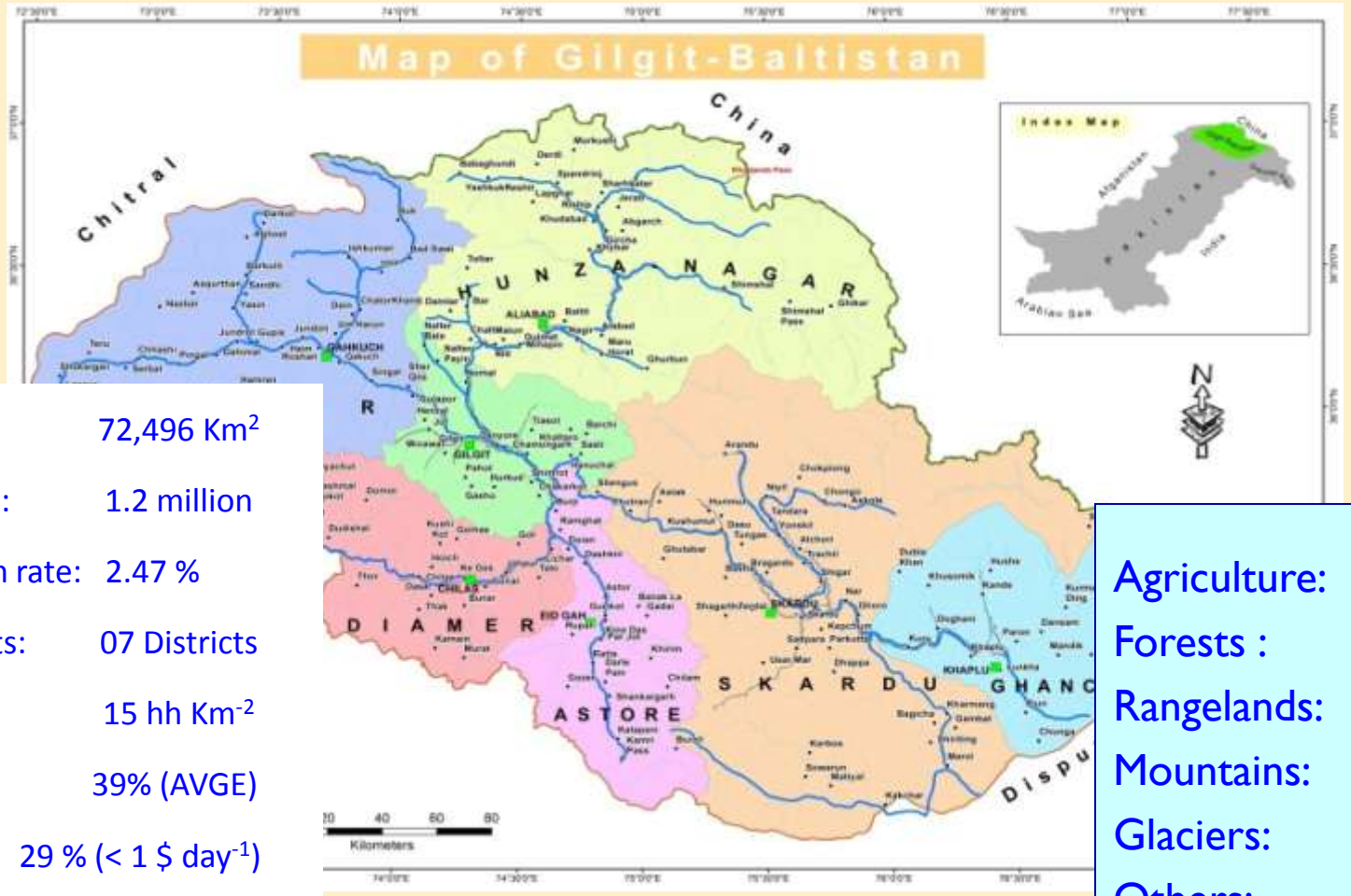
Gilgit Baltistan



Total Area:	72,496 Km^2
Population:	1.2 million
Growth rate:	2.47 %
Admin Units:	07 Districts
Density:	15 hh Km^{-2}
Literacy:	39% (AVGE)
Poverty:	29 % (< 1 $ day^{-1})

Livelihoods:

Agriculture & livestock herding

Agriculture:	2%
Forests :	9.4%
Rangelands:	33%
Mountains:	36.4%
Glaciers:	24%
Others:	6.2%

Life & livelihoods

Mountain areas
Livelihood is traditionally depended on mountain agriculture pastoral farming

Agriculture

Agricultural land is developed on alluvial fans and river traces. Agriculture production is mainly subsistence level (< 2% arable land)

1. Cereal crops (wheat barley ,maize)
2. Horticulture Fruits (Apricot, apple cherry, grapes, almond, pomegranate) vegetables (potato, tomato, peas ,cabbage)

Mountain agriculture irrigation depends on ice & snow melt water

Current changing Agriculture pattern. (before 90s just for subsistence level now Agri. as commercial enterprise)

Climate change

- HKH Mountain ecosystems, life & livelihoods are becoming sensitive to climate change; **agriculture sector** is most vulnerable to negative impacts of changing climate (IUCN, 2009)

- Fluctuation in climatic factors, temperature, precipitation, humidity, increased CO_2 level, flood land sliding are the factors affecting agricultural productivity.

Recent climatic trends in the Karakoram (1961-2006)

- Greatest warming rates are found in winter, resulting primarily from increase in winter maximum temperature – rates of up to 0.5 ^{o}C per decade
- Spring temperatures are also generally rising
- Upward trend in winter precipitation across the region since 1961 by rates of up to 18% per decade
- Increase in summer precipitation

Archer & Fowler, 2004

Impacts of climate change on Agricultural in Mountain Region

POSITIVE IMPACTS

- winter season : shorter/milder summer: becomes longer.
- Change in cropping pattern traditional crops (low profit crops suite for low temperature) are now substituted, as productive cash crops .
- Change in crop calendar(sowing harvesting times) to take advantage of wet period and avoid extreme weather events.
- Longer cropping seasons, can grow two crops in one year

NEGETIVE IMPACTS

- Higher insect/pest sun born disease outbreaks (with increased temperature and humidity)
- Pre and Post harvest losses (reduced quantity and quality in fruits & vegetables)
- Soil Erosion, Flood, land sliding frequent blockage of roads/irrigation channels

Issues arising in food production from climate change





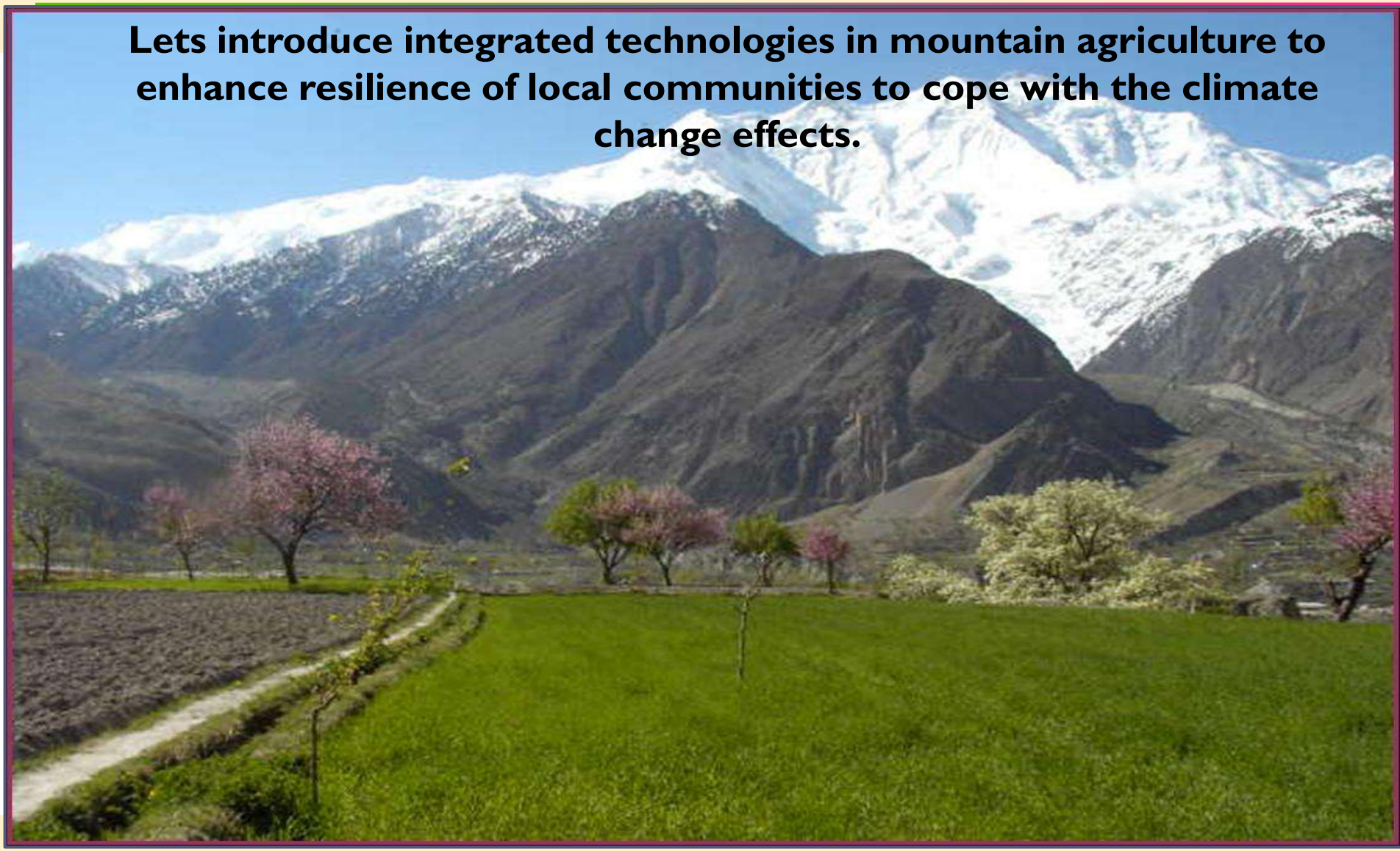
Other issues

Erosion….
Channels/road blockage…
Wilting of crops……

Climate change adaptation in Agriculture

- ✓ **Change in cropping calendar (date of sowing/harvesting).**
- ✓ **Change in cropping pattern substitute the low profit crop barley and millet, to vegetable crops like potatoes tomatoes as cash crops.**
- ✓ Weather forecasting: to keep the farmers aware from the up coming weather conditions specially during crop maturity stage.
- ✓ Introduction of crop varieties adapted to changing climatic conditions resistance to pest/ diseases.
- ✓ Adopt modern planting techniques instead of traditional practices.
- ✓ Adopt organic farming, encourage FYM and reduce chemical fertilizers use.

Lets introduce integrated technologies in mountain agriculture to enhance resilience of local communities to cope with the climate change effects.

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Thank You