

# Food and Water Security in Asia Pacific: Key Issues and Challenges

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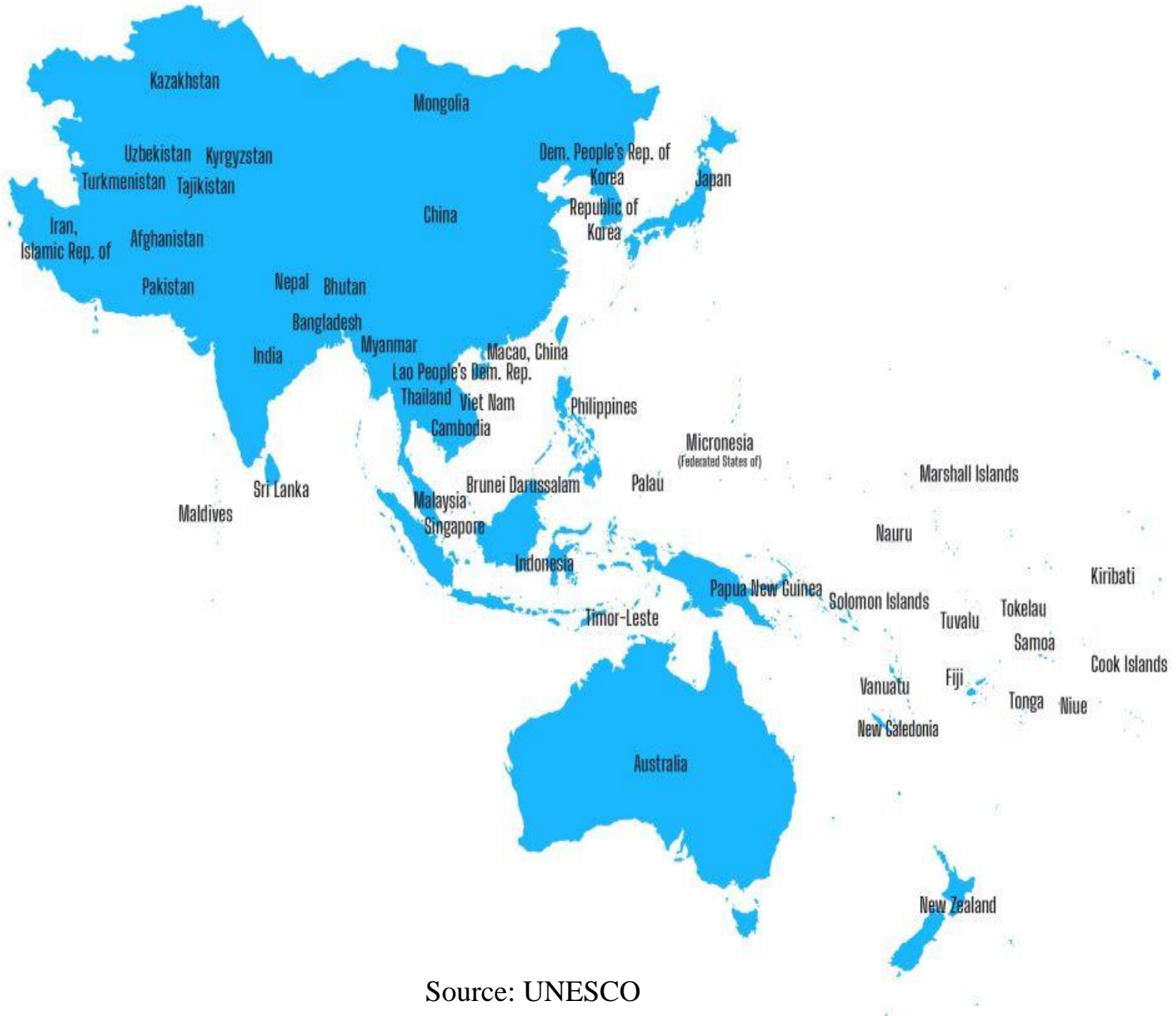
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# What is food security? basic facts

- Food security\* refers to:
  - **availability** of sufficient quality food through domestic production or imports
  - **access** to adequate entitlements (such as common resources) for acquiring food
  - **utilization** of food through diet, water, sanitation, and healthcare to meet all physiological needs
  - **stability** (access to adequate food at all times, and not risk losing it to sudden or gradual risks (including climate change, economic reasons etc.)

\* FAO policy brief (June 2006, no.2)

# Asia Pacific-key trends in demographics



Source: UNESCO

- 60 % of the world's population (approx. 4.3 billion people), it is a diverse region.
  - Home to the world's most populous countries (India, China) to the smallest populations (Pacific).
  - Spans Central Asia, Northeast Asia, South Asia, Southeast Asia, and the Pacific.
- While some countries have youthful populations, others are ageing rapidly.
  - By the middle of century, 1 in 4 will be 60 years or older (compared to 1 in 10 today).
  - In East and Northeast Asia, 1 in 3 will be over 60, many will be women without social protection nets.
- Migration and urbanization are important issues.
  - 40% of all international migrants originate from the region, and more are moving within their own countries.
  - At present only 2 out of 5 people in live in cities. By 2050, almost a billion people in the region will move to cities.

# Climate risks to agriculture and food systems in Asia will escalate (IPCC, 2022)

- Increasing temperatures, changing precipitation levels and extreme climate events, such as heatwaves, droughts and typhoons, will persist in being **important vulnerability drivers that will shape agricultural productivity particularly in South, Southeast and Central Asia.**
- Examples:
  - Major projected impacts in the agriculture and food sectors include **decline in fisheries, aquaculture, crop production** (particularly in South and Southeast Asia), reduction in **livestock** production in Mongolia and **changes in crop, farming systems and crop areas in almost all regions**, with negative implications to food security.
  - In **India**, **rice** production can decrease from 10 to 30%, whereas maize production can decrease from 25 to 70% assuming a range of temperature increase from 1°C to 4°C.
  - **Rice production in Cambodia** can decrease by 45% by 2080 under the high-emissions scenario.
  - Occurrence of **pests threatens the top Asian rice-producing countries** including China, India, Indonesia, Bangladesh, Vietnam, Thailand, Myanmar, the Philippines and Japan.
  - In **South Asia**, monsoon floods from 2005 to 2015 contributed to a high level of loss in agricultural production with peaks in 2008 and 2015 (FAO, 2018a).
  - In **Pakistan**, farmers are experiencing a decline in crop yields and increasing incidence of crop diseases because of climate extremes, particularly floods, droughts and heatwaves.

# Half the people in the world facing food insecurity live in Asia Pacific (FAO, 2022)

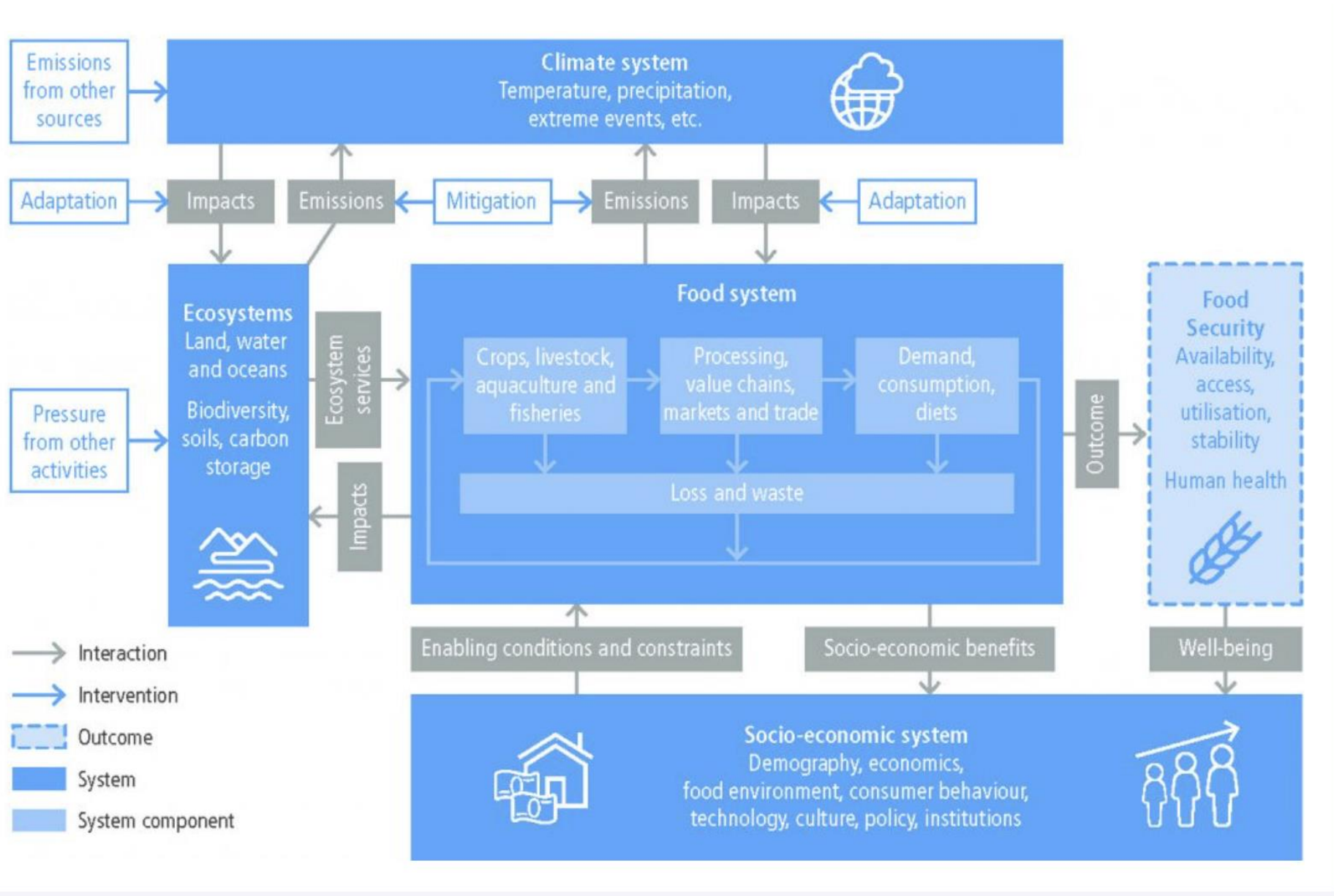
- **More than a billion people** in 2021 (460 million—severe food insecurity; 586 million—moderate food insecurity).
  - **South Asia** (40.6 %), **Southeast Asia** (20.7 %), **Oceania** (13%) and **East Asia** (6.2 %). **East Asia** has the lowest levels of food insecurity and where food insecurity fell below pre-pandemic levels in 2021.
- **23%** of the children are stunted in the region (half of the world's total).
  - **Oceania** excluding Australia and New Zealand (41.4%), **South Asia** (30.7%), **Southeast Asia** (27.4 %) and **East Asia** (4.9 %).
- **9.9%** of the children under 5 are wasting away due to malnutrition (global average 6.7%).
  - **South Asia** (14.1 %), **Oceania** excluding Australia and New Zealand (9 %), **Southeast Asia** (8.2 %) and **East Asia** (1.7 %).
- **32.9%** of women (15-49 yrs) had anaemia in 2019.
  - **South Asia** (48.2%), **Oceania** excluding Australia and New Zealand (33.9 %), **Southeast Asia** (27.2 %) and **East Asia** (16.1 %).

## Food prices are getting higher (FAO, 2022)

- The continued impacts of the **COVID-19 pandemic and the war in Ukraine** on the affordability of food are exacerbating hunger and food insecurity.
  - In 2021, **49.8%** of the global total of people experiencing food insecurity were in Asia and Pacific. South Asia (**412.9 million**), East Asia (**28 million**), Southeast Asia (**17.4 million**), and Oceania (**2 million**).
- The average cost of nutritious food is **USD 3.98 per person/day**.
  - Almost **1.9 billion people or 44.5%** of the population in Asia and the Pacific could not afford a healthy diet in 2020 due to the increased cost.

What can be done? locating causality

# Extant framing: links between food security, climate change, and socio-economic systems





## This is what it means...

- Food security is an outcome of the food system → **human well-being**.
  - Food production must increase by **70% to meet the needs of 9.1 billion** people by 2050.\*
- Food security → is indirectly linked with **climate and ecosystems through the socio-economic system**.
- **Adaptation** measures can help to reduce negative impacts of climate change on the food system and ecosystems.
- **Mitigation** measures can reduce GHG emissions coming from the food system and ecosystems.

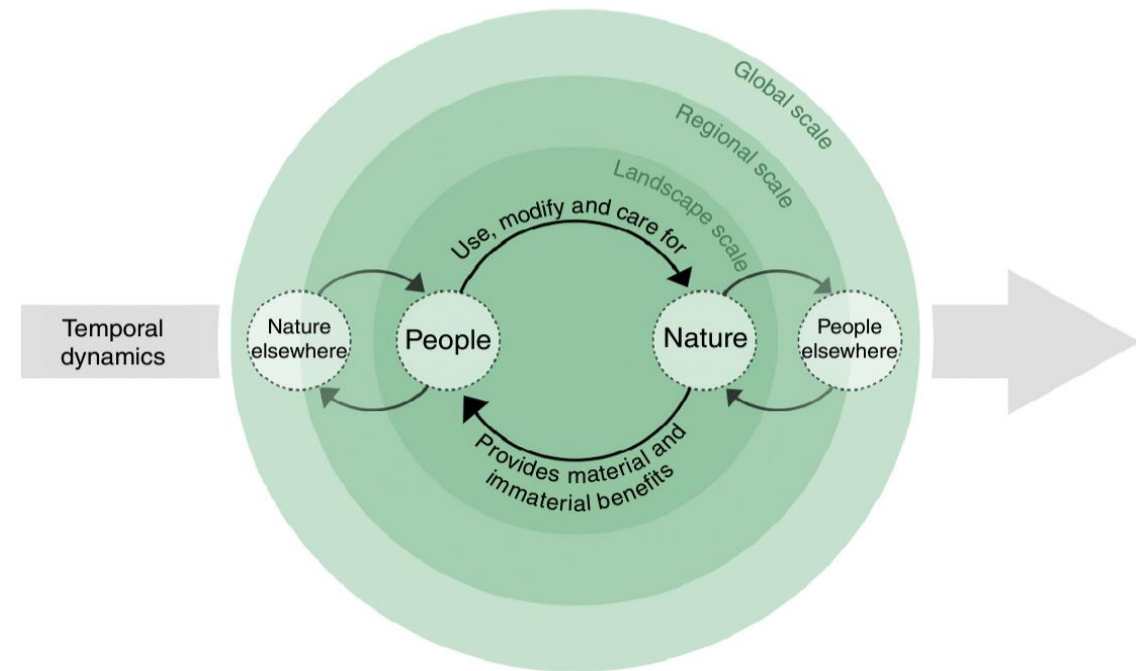
Extant framing simplifies the complexity of ground realities...

# 1. Climate change is not the only cause of food insecurity

- Climate change is not the only cause of food insecurity.
  - Food insecurity (including any crises) results from distribution and markets that create conditions where low-income populations are unable to access enough food.
  - Legal resources (such as land, labor, money etc.) + social networks of support → food insecurity among populations (Amartya Sen, 1983)
- Thus, in addition to the bio-physical aspects of climate change, it is important to pay attention to the socio-political-economic decisions, processes, and systems that create vulnerability.

## 2. Social-ecological systems are cascaded across time and space

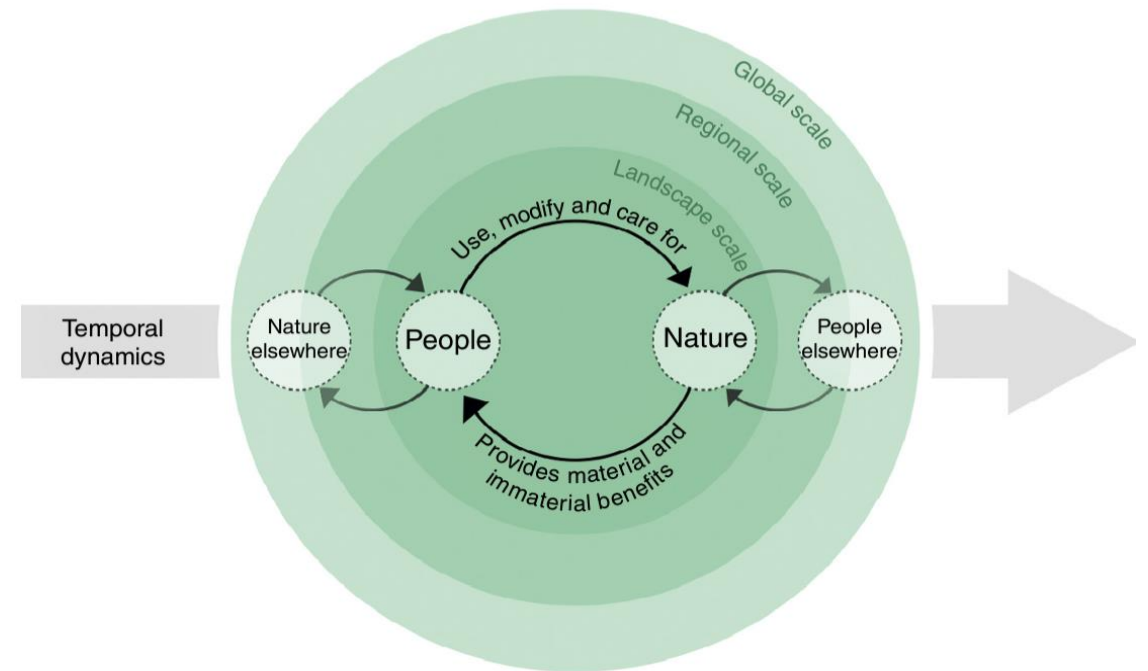
- Also, it is important to consider **economic globalization** (trade, investment, integrated financial markets and production activities, communication systems, etc.)
- Since climate change and globalization are ongoing processes, their overlap may lead to climate impacts of negative and positive kinds, leading to “**double exposure**” (Leichenko and O’Brien, 2000).
  - E.g. **agro-industrial modernization in Mexico** → benefitted agro-industrialists, capitalist farmers and some peasant households → but excluded small farmers (Kay, 1997 cited in Leichenko and O’Brien, 2000).



Interdependent and linked systems of people and nature nested at local and global scales. (Fischer et al., 2015)

## 2. Social-ecological systems are cascaded across time and space (cont'd)

- A different example of “**double exposure**” is when the impact of climate change reduces food production and countries may import from other places, creating food insecurity in the latter.
  - E.g. winter drought in 2011 in China’s wheat growing region led her to buy it in the international market → doubling of wheat prices → significant impact on Egypt, the world’s largest wheat importer → high food and bread prices in Egypt + other pent-up grievances → coincided with the Arab Spring (Sternberg 2012).



Interdependent and linked systems of people and nature nested at local and global scales. (Fischer et al., 2015)

### 3. Ensuring food insecurity requires systemic changes to prevent deepening structural inequities

- As IPCC reports tell us, agriculture and food system are key responses to climate change:
  - “Agriculture and the food system are key to global climate change responses. Combining supply-side actions such as efficient production, transport, and processing with demand-side interventions such as modification of food choices, and reduction of food loss and waste, reduces GHG emissions and enhances food system resilience (*high confidence*).” (IPCC, 2022)
- In making agricultural systems efficient through corporate/market-driven solutions, but especially securing/acquiring land, it is important to consider the impact on smallholder farmers and indigenous populations in Asia and Pacific.
  - 30% of population of the region is employed in agriculture, mostly as smallholder farmers (ILO, 2022).
  - 90% of the growth in crop production globally (80% in developing countries) is supposed to come from higher yields and increased cropping intensity, with the remainder coming from land expansion (FAO, 2009).

### 3. Take land and water issues in account to prevent deepening inequities (cont'd)

- Solutions need to take **land issues** in account as they are central to food and agriculture.
  - Land-based inequities already exist and should not be deepened through superficial policy measures that take land away from marginalized groups and to capitalistic production systems (Franco and Borras Jr., 2021).
- The **pressure on renewable water resources** from irrigation would remain severe and could even increase slightly in several countries.
- Simply, policy reforms should not push smallholder farmers, indigenous populations, and other marginalized groups including women, into **further vulnerability through production aiming to maximize benefits, even while deepening inequities.**

## 4. Cities are in the heart of action and need to be studied in relation to rural processes

- Urbanization is driving **changes in agri-food systems** across the rural–urban continuum. These changes represent both challenges and opportunities to ensure everyone has access to affordable healthy diets.
- Urbanization is also leading to **increasing claims on water resources away from cities**. In cases of big cities vs. smallholder farmers and upstream populations, the needs of cities are often prioritized considering contribution to GDP by cities. These claims and decisions portend all sorts of issues in the present and near future.



## 4. Urban food security is becoming a significant concern (cont'd)

- Urban food security and nutrition will increasingly become significant.
  - More than 50 percent of the Asia and the Pacific region's population is expected to live in urban areas by 2030.
    - Cities across the region will need to accommodate almost a billion more people by 2050.
  - Malnutrition and health deprivation levels among the urban poor are often as high as among the rural poor (FAO, 2022).
    - About 40 percent of the region's current urban population, 500 million, lives in informal settlements, which typically face governance challenges.
    - The urban poor are also among the most vulnerable to shocks such as the COVID-19 pandemic and the impacts of climate change in cities.

Thank you!