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SUSTAINABLE DEVELOPMENT GOALS

Food Systems Solutions for Healthier Diets, Better Nutrition and Health amidst Climate Change

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Diversification for resilient Food and Nutrition Systems

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Outline:

Potential of Agri-Food Systems for Healthy Diets, Nutrition and Health

Impact of Climate change on Agrifood Systems, Nutrition and Health

Biodiversity loss Threatens Resilience of Agri-food systems and Environment under Climate Change

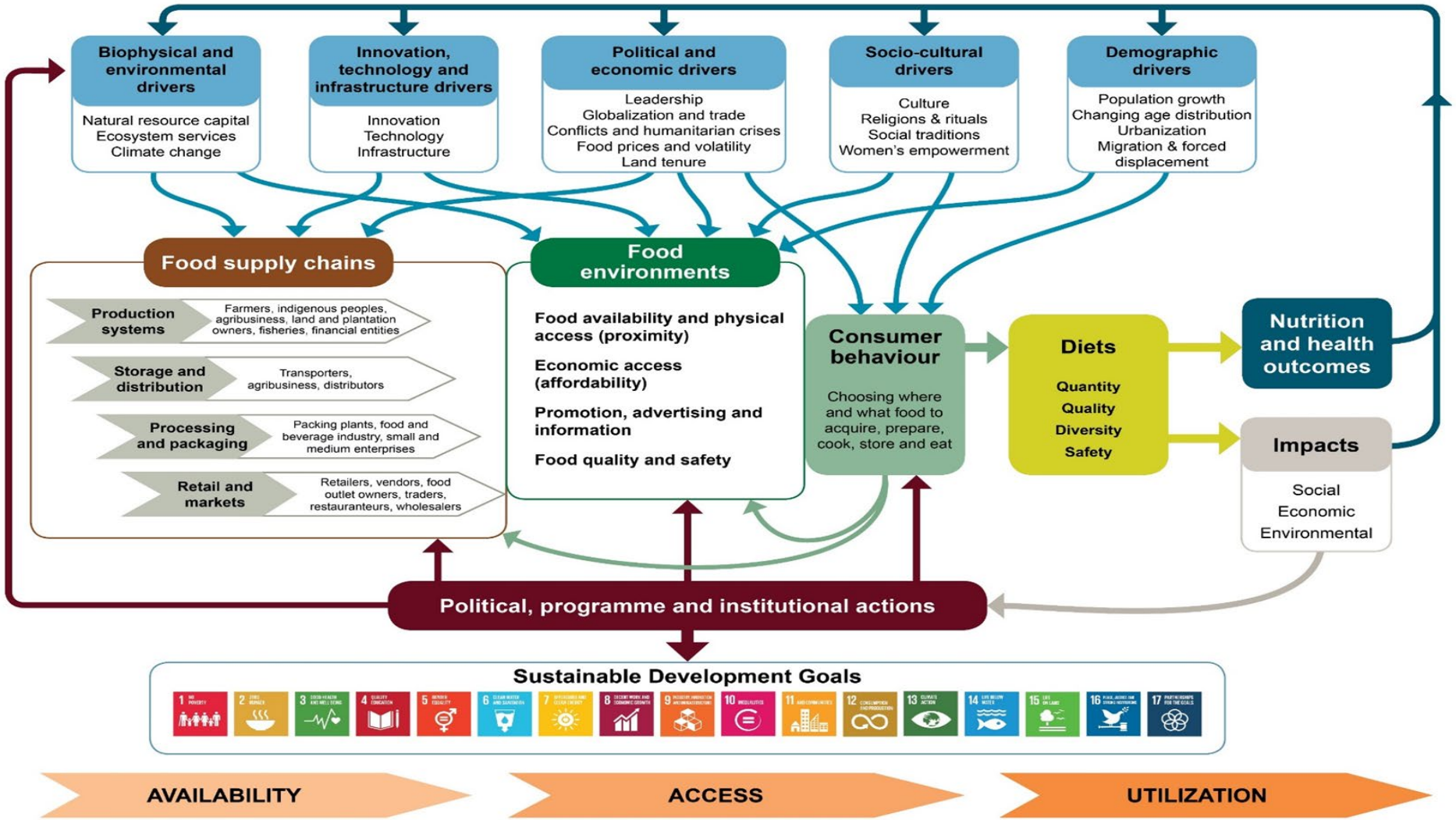
To make Food and Agri-food systems work for Health & Nutrition and the Environment

Key entry points for agri-food system transformation

Final Remarks

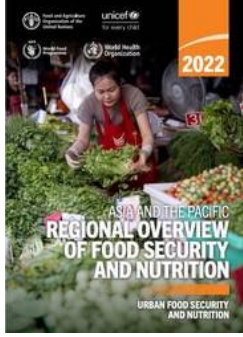
Potential of AgriFood Systems for Healthy Diets, Nutrition and Health

→ *year-round nutritious food production for healthy & affordable diets.*



Source: CFS HLPE Nutrition & Food Systems 2017

Current food systems fail to deliver its full potential for healthy diets and nutrition



Leading to….

- **billions people food insecure, and unaffordable to healthy diets,**
- **millions of children are stunted and wasted**
- **↑ obesity and non-communicable diseases (NCDs)**

Healthy diets are unaffordable (USD 3.98/d) to **1.9 billion (44.5%)** (*Global: 3.1 billion, 42%)*

Asia Pacific Overview of Food Security & Nutrition 2022

SDG Indicators	Number and Prevalence (%)
Under-nourishment / Hunger	396 million (9.1%)
Food Insecurity (Moderate or Severe)	1.05 billion (24%)
Child Stunting (under 5y)	74.8 million (22.9%)
Child Wasting (under 5y)	9.9%
Women Anemia (15-49y)	32.9%
Child Overweight (under-5 y)	5% in Asia (8% in the Pacific)
Adult Obesity	6.1% (23.6% in the Pacific)

Countries in Asia Pac are off track to achieve SDG targets on hunger and malnutrition.

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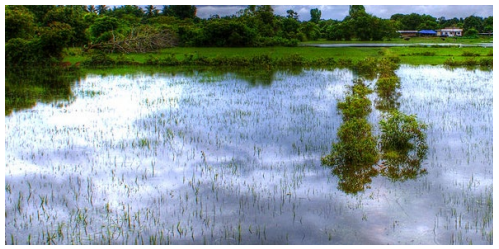
Impact of Climate change on AgriFood Systems, Nutrition and Health

Climate change affects Agri-food production which, however, also contributes to climate change

- **Impact of agri-food production on climate change & environment**
  - 1/3 global GHG emissions generated from agrif-ood Systems (Crippa et al. 2021)
    - Livestock related agri-food GHG emission: 46-74%
    - Food Losses & waste related agri-food GHG emission: 8-10%

  - 70% global fresh water used for irrigation – water scarcity. (FAO 2017)
  - Soil degradation & environmental pollution
  - Deforestation, desertification
  - Biodiversity Loss

- **Impact of climate change on agri-food systems, nutrition & health**
  - ↓ fish catch & crops yield
  - ↑ plant and livestock diseases & deaths
  - Risk of Food safety & food-borne diseases - Overuse of pesticides and antibiotics
  - ↓ crops & nutrient contents (protein, iron, zinc, vitamins) leading to **malnutrition, obesity and non-communicable diseases**



Biodiversity loss Threatens Resilience of Agri-food systems and Environment under climate change

- Limited food diversity for human consumption contributing to biodiversity loss, resulting in lacking dietary diversity and agri-food systems resilience
  - 75% human foods are based on a narrow range of commercialized staple crops (n =12) and 5 animal foods
  - Lack of the power of animal and plant genetic diversity to support resilience of the agri-food systems and environment under climate threats

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To make Food and Agrifood systems work for Nutrition, Health and Environment

Food, is the strongest lever to optimize health and environmental sustainability (but currently works against both)

Agri-food systems are also a space of solutions for:

- Climate change
- biodiversity losses
- Healthy diets and better nutrition
- Food safety and health
- Animal and plant health
- Sustainable and resilient environmental, etc.

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Key entry points for on-farm agri-food system transformation

ECOSYSTEM

BIODIVERSITY
Promote wild and local cultivars, and neglected and underutilized species

FORESTS
Encourage sustainable forestry management that protects many ecosystem services

WATER
Improve water management and irrigation practices to support crop diversification and increase crop yields and nutrient quality

SOIL
Enhance soil health for biodiversity conservation, climate-change adaptation and mitigation, food safety and micronutrient availability in diets

BIOECONOMY
Promote knowledge-based bioeconomy to achieve global nutritional needs without destroying the Earth's natural-resource base

Sustainable food Production

CROP IMPROVEMENT
Choose nutrient dense food varieties that are also high yielding & climate-smart/resilient

INTEGRATED PRODUCTION SYSTEM, AGROECOLOGY REGENERATIVE
Optimize resources and species interactions (e.g. rice–fish–duck integrated system)

AQUATIC FOODS
Promote sustainable management of marine ecosystems and aquatic resources to ensure food security while preserving ecosystem services

LIVESTOCK-DERIVED FOODS
Promote sustainable animal production practices by improving animal health and reproduction, culling unproductive animals and improving genetics to increase efficiency and reduce environmental impacts

REDUCE POST-HARVEST LOSSES
Raise efficiency of post-harvest systems to reduce PHL & improve nutrition, food safety & security

Off-farm solutions - Nutritive-sensitive food production and value chains

Examples of policy space within the agri-food systems

- **Nutrition-sensitive value chains**. Improve storage, processing and preservation to retain nutritional value of foods, rather than investing in highly processed non-nutritious foods.
- **Shortened & localized value chain, linking farmers to market/consumers** –,
  - reduce running costs (e.g. middle men, transportation, storage), GHG emission; improve farmer income. Improve food access and reduce food price. Improve urban & peri-urban linkage for urban food security and nutrition
- **Reformulate food products** that are low in nutrient values, but high in fats, especially trans-fats, sugars and salt, for the prevention of obesity and diet-related NCDs.

Off-farm solutions

Examples of policy space within the agri-food systems

- **Infrastructure investment** – electricity & transport networks, cold storage for improving efficiencies along the value chain for supplying safe & nutritious foods that are perishable. Reduce post-harvest loss

- Enhance access to **technologies and innovation** by family farmers, in partnership with private sector, for nutritious food production with **reduced production cost** and maintain adequate **profitability**.
  - e.g. e-platform, e-commence, block chain; Geographical Indications (GI) – an IP protection system
- Enhance policies that **stimulate income-generating economic activities**, while enhancing employment and **social protection** in order to close the **poverty gap** and **income inequality**.
  - Eco-tourism, Geographical Indications (GI) – an IP protection system
- **Public procurement** in school meal programmes (e.g. Home-grown school Feeding), community kitchen; women's luncheon clubs (faith or community groups)

- Promote **Urban farming:** school gardening, home-stead gardening, edible landscape, vertical farming for more availability of nutritious foods

Off farm solutions: creating consumer demand for healthier Diets

- **Develop Food-based Dietary Guidelines (FBDGs) -** empower consumers to make healthier & diversified food choice
  - **FBDGs** also inform **food and agriculture policies** for diversifying food production to **nourish people**, not just feeding people!
  - Nutrition Education, SBCC: public campaigns; mass media & social media messaging, ante-natal classes & counselling, etc.
  - Promote homestead gardens: horticulture, fish ponds, small domesticated animals (Waste recycle as well!)

- **Nutrition-sensitive social protection** schemes for the vulnerable groups to access nutritious foods, e.g. conditional cash transfer, community kitchen, cooking demonstration for healthy family meals, food banking, etc.

- **Regulation & legislation** on advertising and promotion of foods high in fat, sugar and salt, especially that target at children and adolescents.
  - Introduce food and nutrition labelling - to guide consumer on nutrition values of foods.

- **Repurposing fiscal policies** to enhance nutritive-sensitive food production, affordability of diets and trade policy for nutrition enhancement

Final Remarks

Challenges:

- Current agri-food systems fail to deliver its full potential for healthy diets and nutrition
- Climate change affects the whole agri-food systems and threatening sustainability and resilience
- Biodiversity loss threatens agri-food systems and environmental resilience under climate change

Opportunities:

- Agri-food system, however, are the solution to these challenges
- Sustainable & resilient agri-food systems transformation to increase diversity (incl. biodiversity) of nutritious food production
- Nature-positive agri-food production systems (from farm to fork) for environmental resilience and social sustainability under climate change
- Develop key policies & actions and R&D to address challenges of climate change on agrifood systems and to mitigate and adapt the impact of climate change on diet, health and environment.
- Create an enabling food environment to empower consumers for healthy diets and responsible consumption aligning with environmental sustainability.

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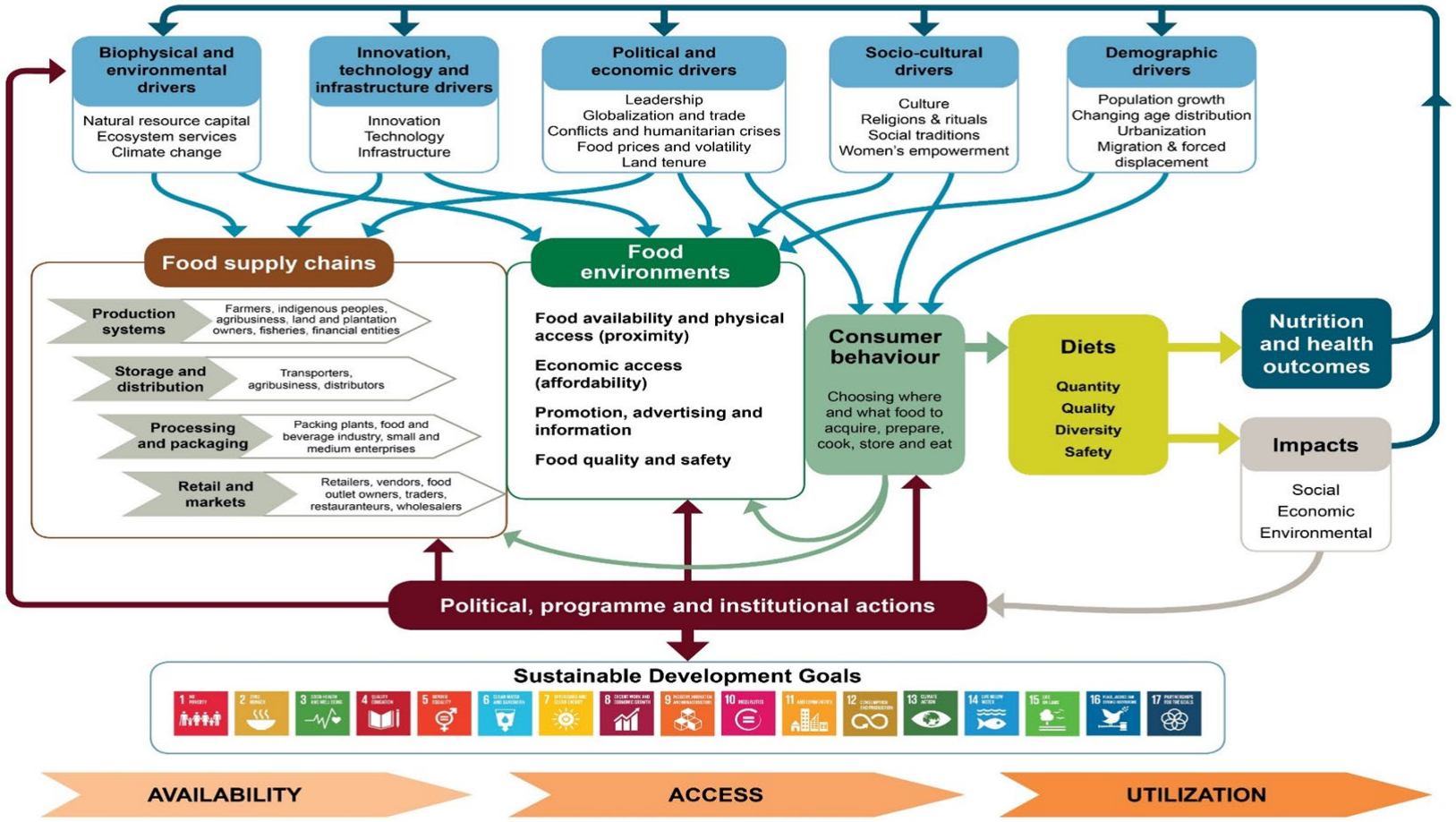
Agri-food systems transformation can harness it's power to benefit humanity and the earth!



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Thank You!

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Key entry points for agri-food system transformation

FOOD ENVIRONMENT

MARKET
Strengthen rural–urban linkages and short supply chains while ensuring that trade benefits people and protects the environment

INSTITUTIONAL PROCUREMENT
Improve demand for and supply of nutritious, perishable foods and agrobiodiversity along with safety and quality standards

FOOD WASTE
Reduce waste to mitigate agri-food systems' contribution to climate change while improving nutrition outcomes with more available food

CONSUMER BEHAVIOUR

FOOD CHOICES
Engage with and learn from food lifestyles and food movements to inspire healthy and sustainable consumption patterns

EDUCATION
Endorse food labels and logos that can increase consumers' awareness of environmental and health impacts of their food choices

Food-based dietary guidelines (FBDGs)
Promote science-based dietary recommendations for the general public to help shape healthy food choices