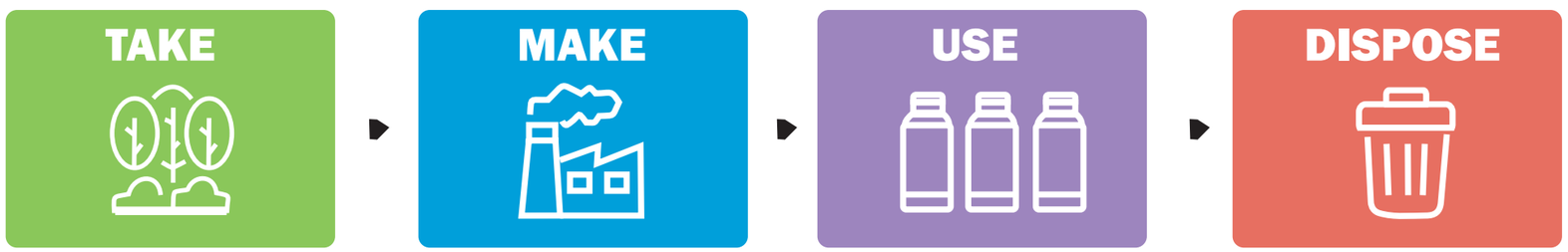
COMMUNITY WOMEN'S ENTERPRISE NETWORK

Linear vs, circular economy

gain
Global Alliance for Improved Nutrition

Linear economy

Materials in a linear economy create waste after use



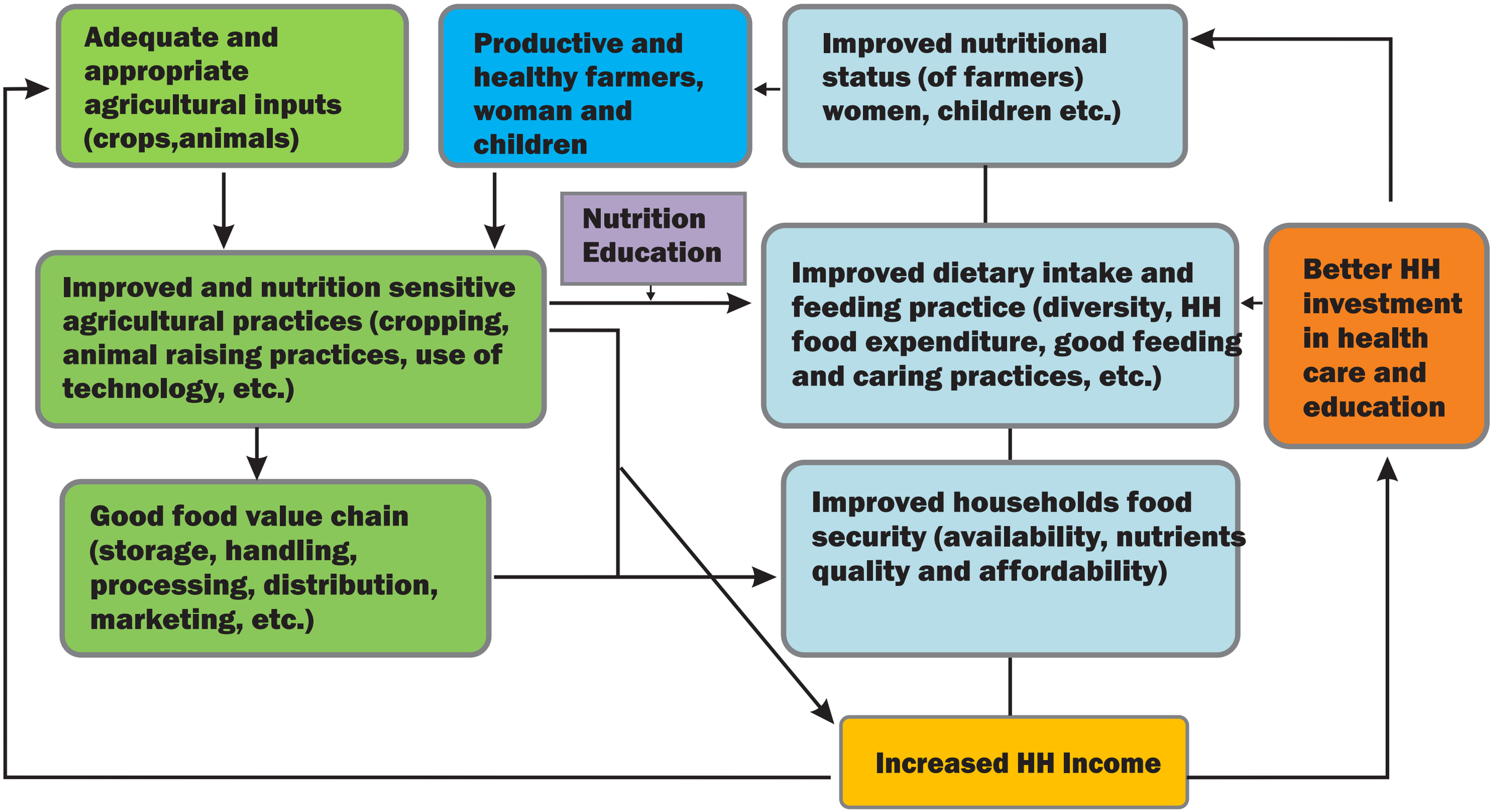
Circular economy

Materials in a circular economy are collected and reused after use.

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

AGRICULTURE AND NUTRITION RELATIONSHIPS



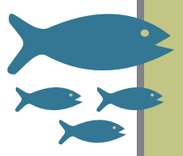
COMMUNITY WOMEN'S ENTERPRISE NETWORK

WAYS TO IMPROVE NUTRITION THROUGH AGRICULTURE

gain
Global Alliance for Improved Nutrition

1 Increase Availability of and Access to Diverse Nutritious Foods

- Invest in nutritious food value chains
- Improve the availability of nutri tious foods year round through storage
- Make nutritious foods safe and affordable
- Promote good agricultural practices that protect the environment



2 Encourage Income Use for Better Diets, Health, and Hygiene

- Improve household budgeting skills to afford the cost of nutritious diets

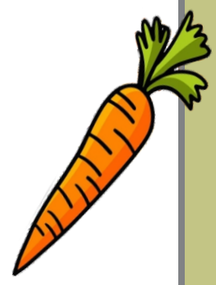
- Stress the importance of investing in diverse foods, proper infant and child feeding, caregiving and health

3 Recognise the Central Role of Women in Agriculture and Nutrition

- Empower women and promote gender equity and an equitable division of labor
- Introduce time and labor saving farming technologies
- Support time for self and child care, especially for pregnant and lactating mothers

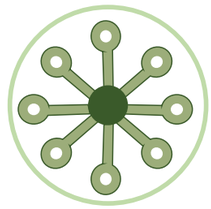
4 Generate Demand for Diverse Nutritious Foods

- Increase consumers' nutrition
- Make nutritious foods convenient and appealing
- Overcome cultural barriers to consume nutritious foods



5 Establish Politics and Programs ro Support a Broad View of Nutrition

- Advocate for explicit nutrition goals within national policies and development activities

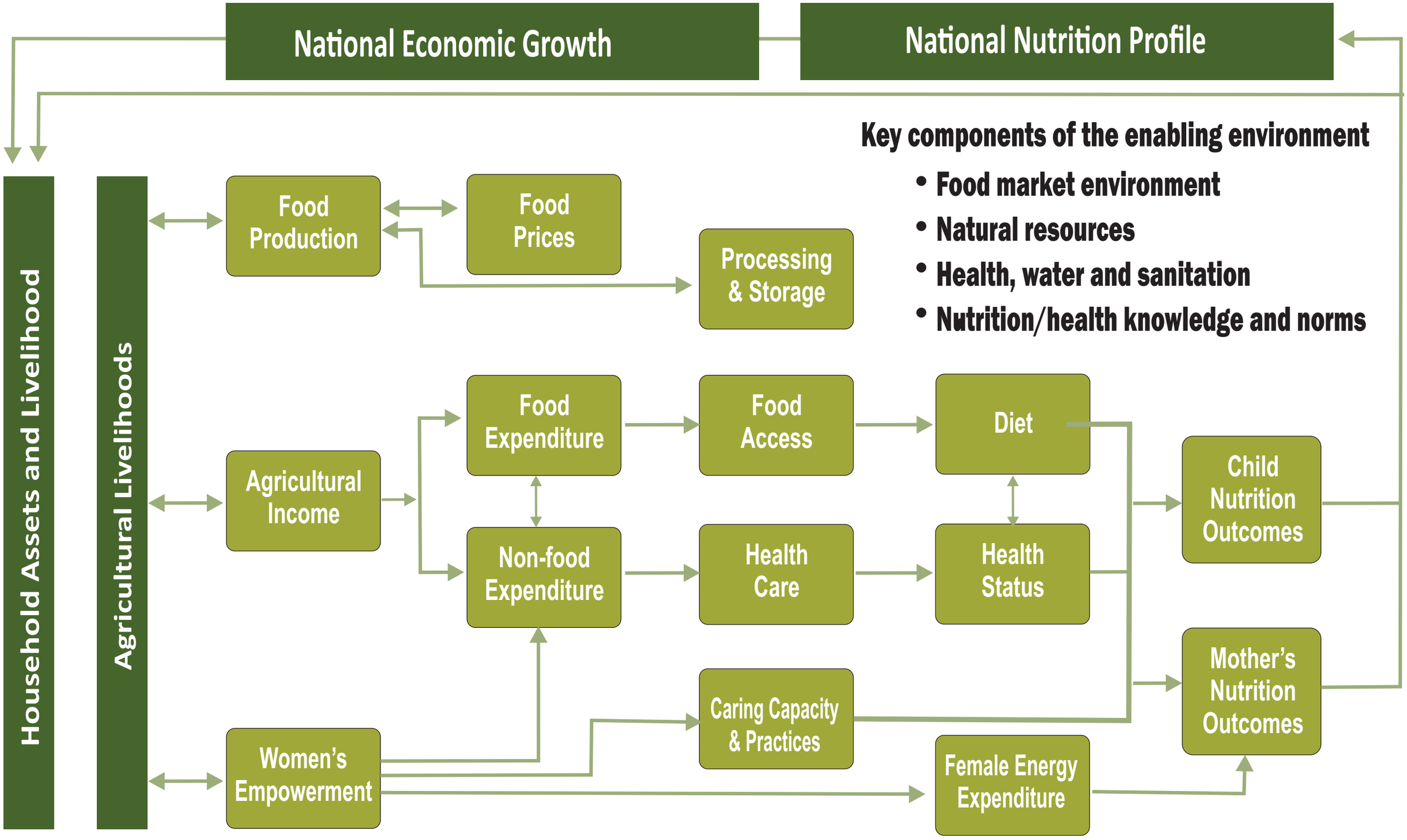


- Establish and strengthen partnership
- Collaborate and share knowledge and resources

COMMUNITY WOMEN'S ENTERPRISE NETWORK

AGRICULTURE TO NUTRITION PATHWAYS

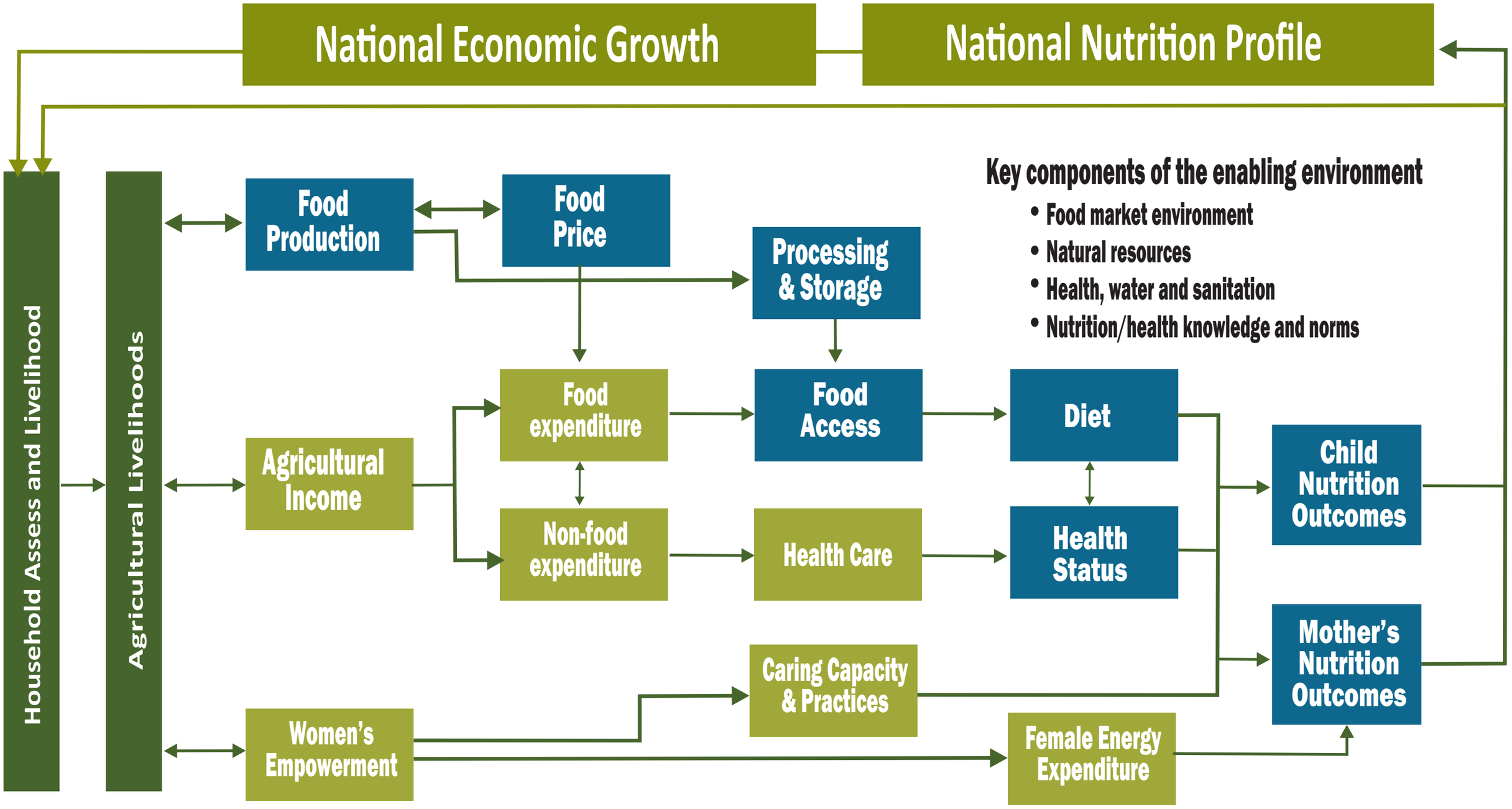
gain
Global Alliance for Improved Nutrition



COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

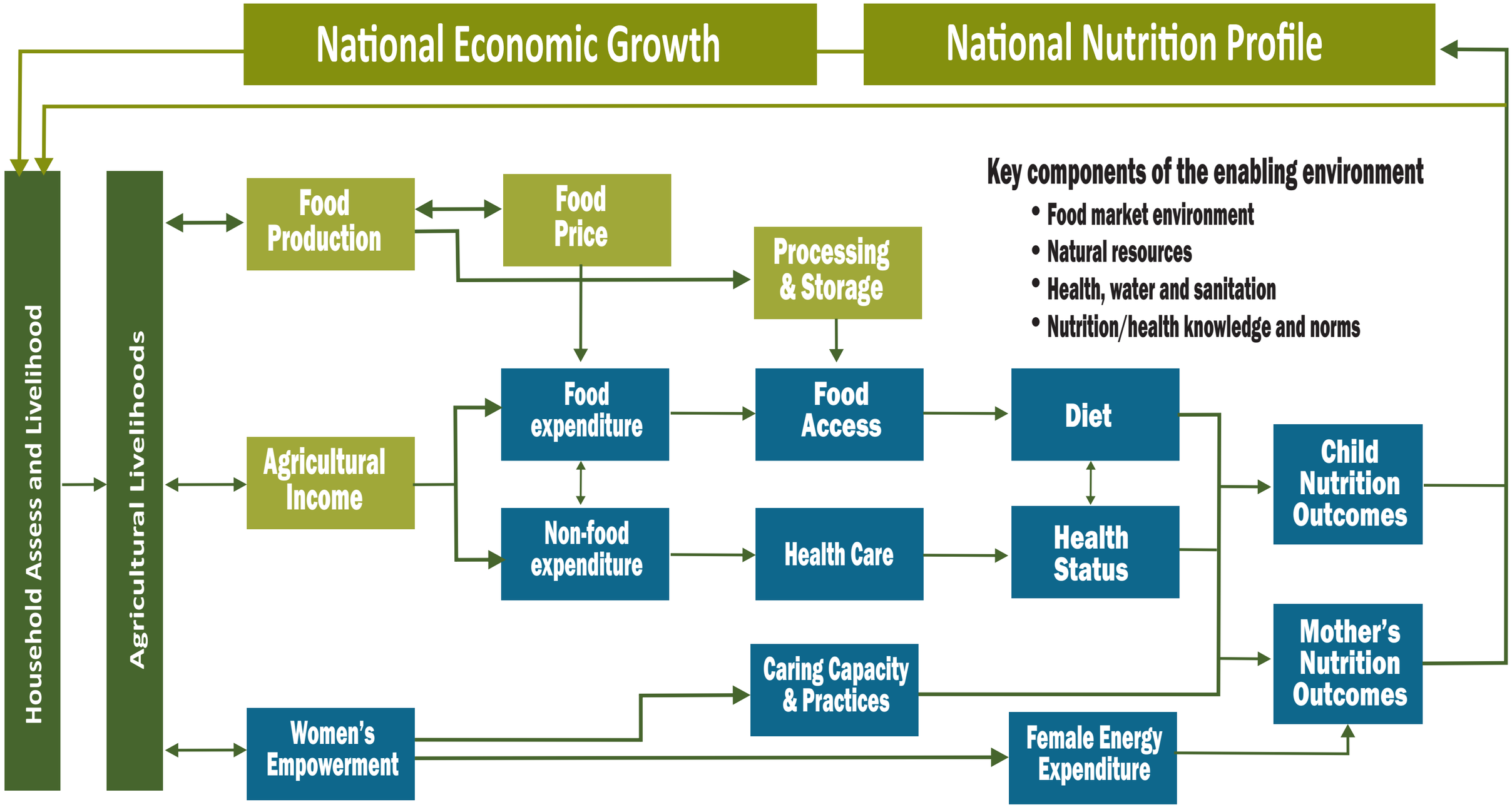
FOOD PRODUCTION PATHWAYS
HIGHLIGHTED IN BLUE



COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

WOMENS EMPOWERMENT PATHWAY HIGHLIGHTED IN BLUE

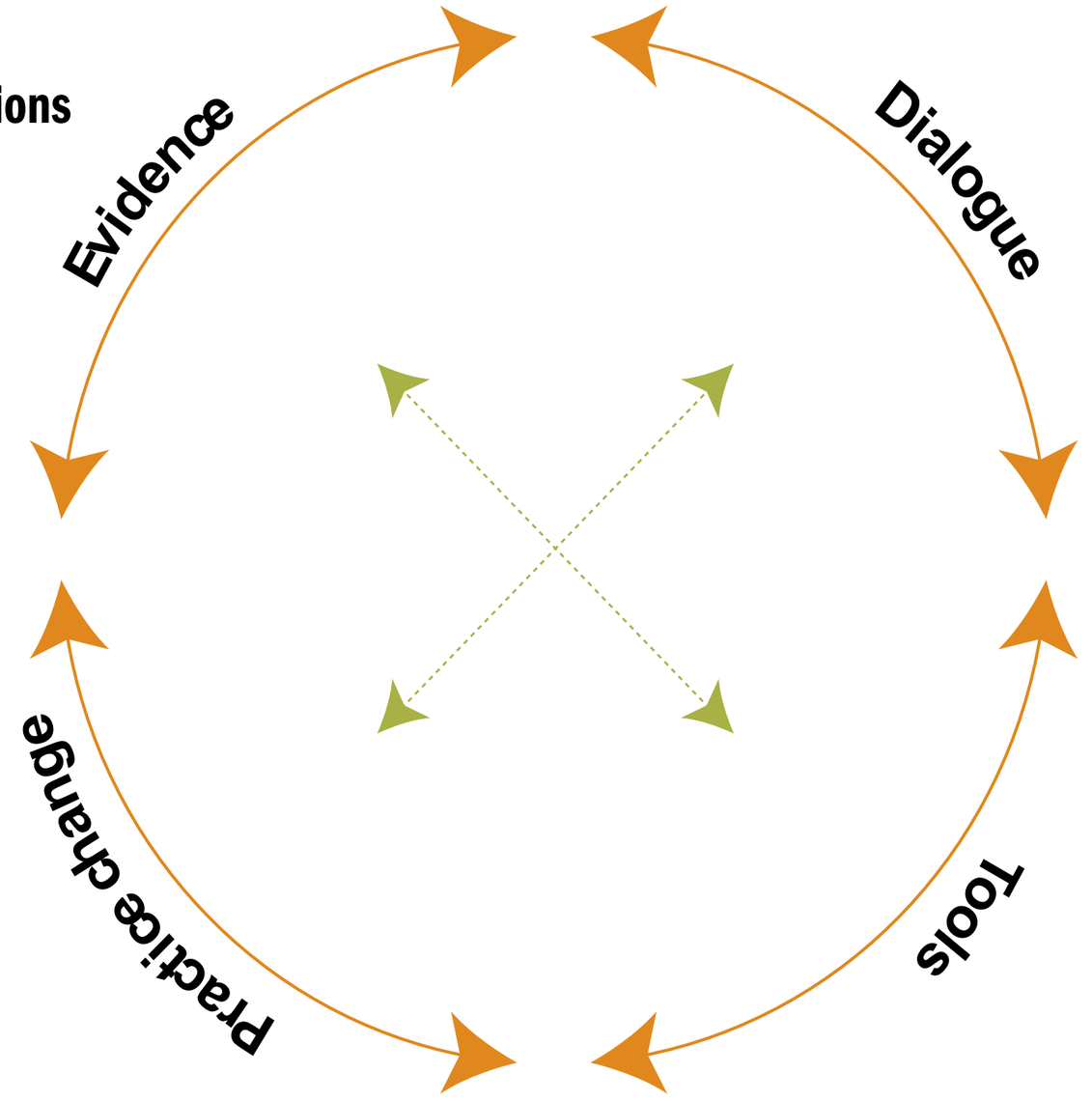


COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

OPERATING SUSTAINABILITY: FOUR BROAD AREAS OF ACTION

- Co-constructed knowledge
- Assessment of issues and options
- Foresight/Auditing
- Indicate solutions
- Build capacity
- Indicators



- Create inclusive platforms
- Encourage joint action
- Harmonize metrics and procedures
- Negotiate tradeos

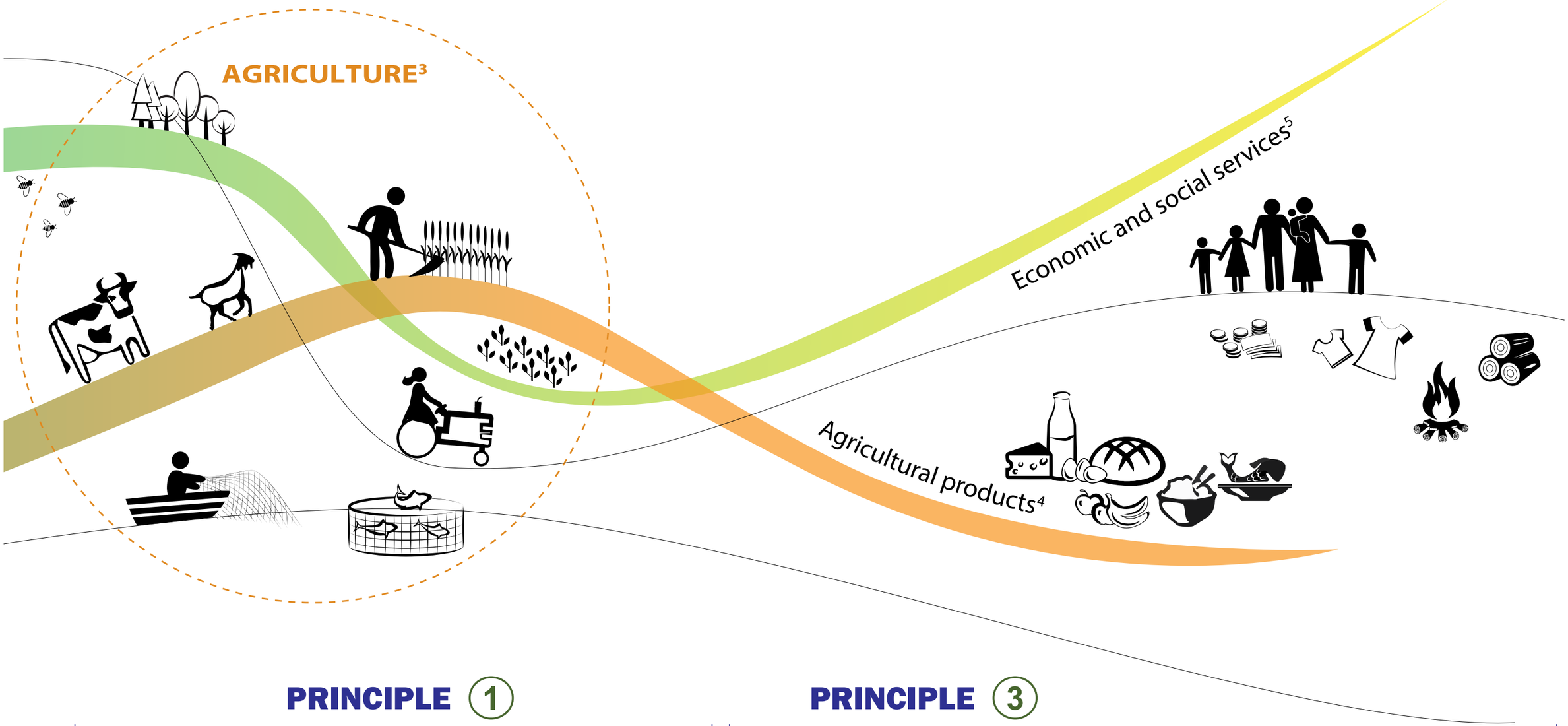
- Awareness raising
- Innovation networks
- Ecient markets
- Capacity building
- Institutional processes

- Guidance
- Regulations and standards
- Financing

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

APPLICATION OF THE VISION AND THE FIVE PRINCIPLES OF SUSTAINABLE AGRICULTURE



PRINCIPLE 1

Improving efficiency in the use of resources is crucial to sustainable agriculture

PRINCIPLE 3

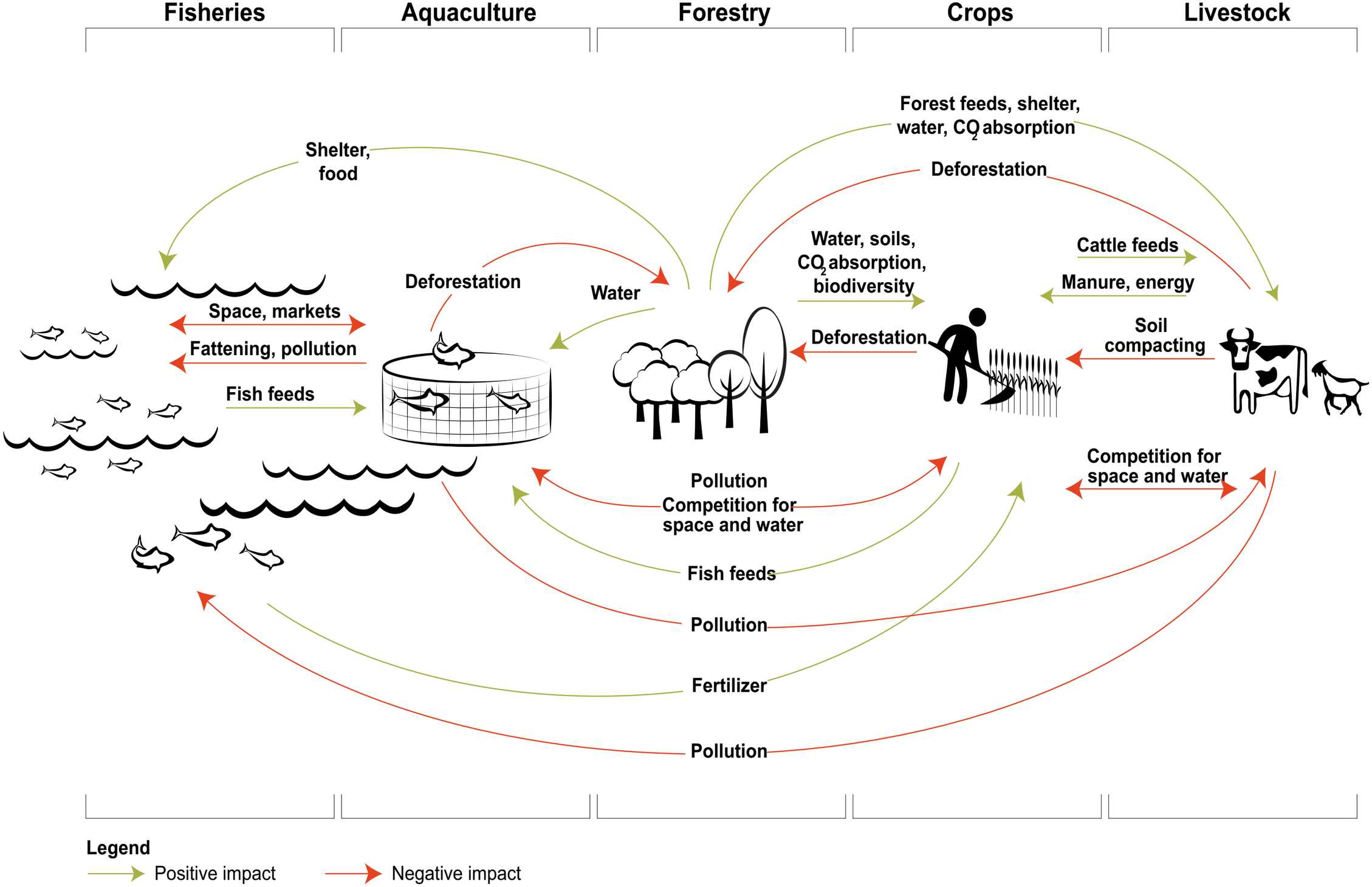
Agriculture that fails to protect and improves rural livelihoods, equity and social well being is unsustainable

PRINCIPLE 4

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

Selected Synergies (in Green) and Conflicts (in Red) among the Agricultural Sectors



COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

SOME OF THE LOCALLY AVAILABLE ENERGY GIVING FOODS

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

ANIMAL BASED SOURCES OF PROTEIN

CHICKEN

BEEF

FISH

EGGS

WHITE ANTS

SILVERFISH

Milk

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

PLANT BASED SOURCES OF PROTEIN

GROUND NUTS

SOYA BEANS

ASSORTED LEGUME SEEDS

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

WHY DRINK WATER?

1. Helps to loose weight
2. Healthy Skin
3. Fights infection
4. Get rid of body Toxins
5. Improve productivity

6. Prevent joint pain & Arthritis
7. Boost energy
8. Prevent constipation
9. Reduce risk of cancer
10. Healthy heart

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

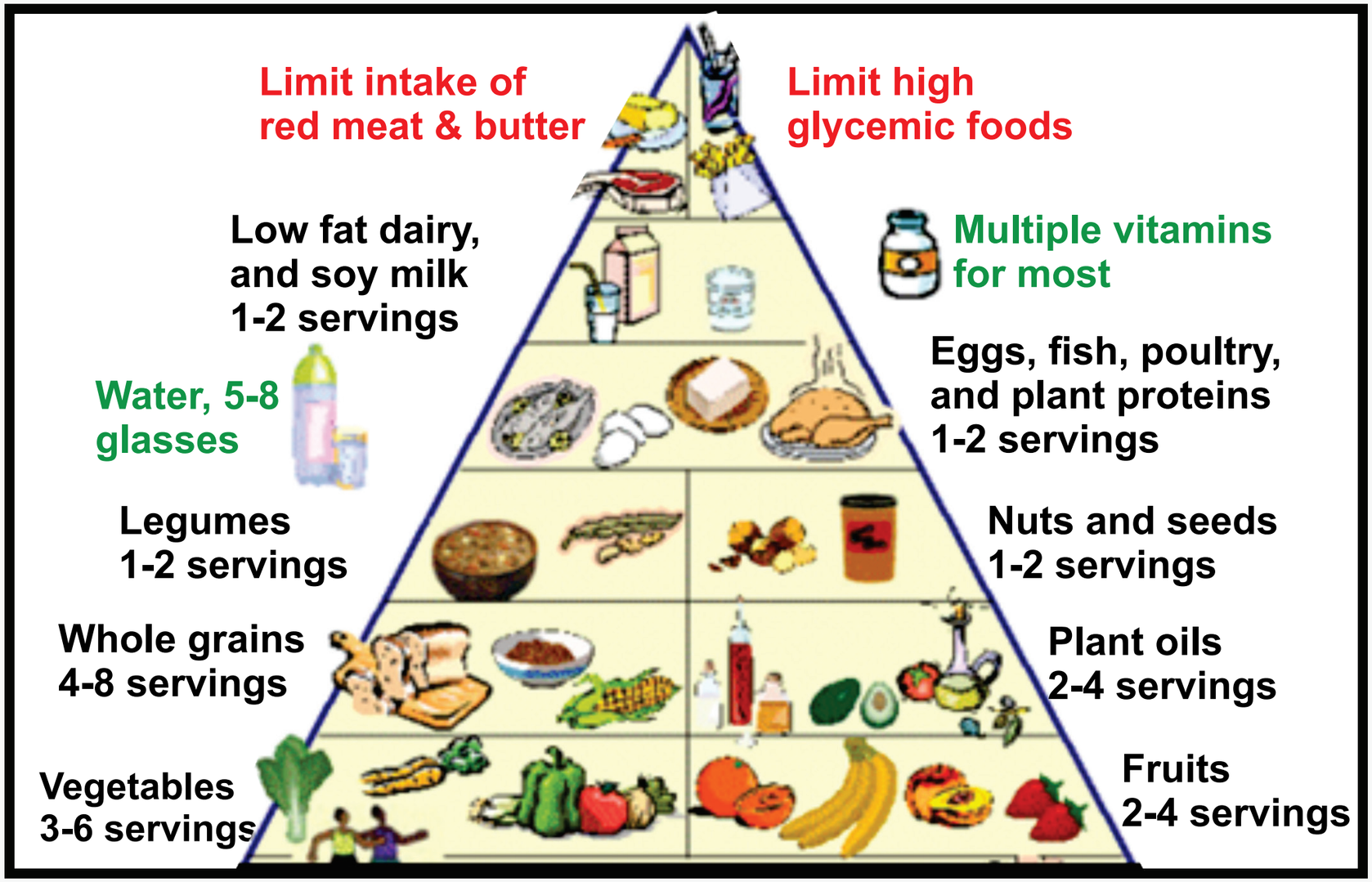
PLANT BASED SOURCES OF VITAMINS AND MINERALS

Teaching Resources

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

FOOD GUIDE/PYRAMID



COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

PLANTING COVER CROPS OR GREEN MANURES

Green manures are those used for the primary purpose of improving soil fertility while cover crops are those crops used for the primary purpose of controlling weeds. These crops provide a number of benefits to famers for example.
protect soil by preventing erosion,

•Improve yields by enhancing soil health
•replenishing soil nutrients,
•Keeping weeds in check, reducing the need for herbicides.
.improve the availability of soil water

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

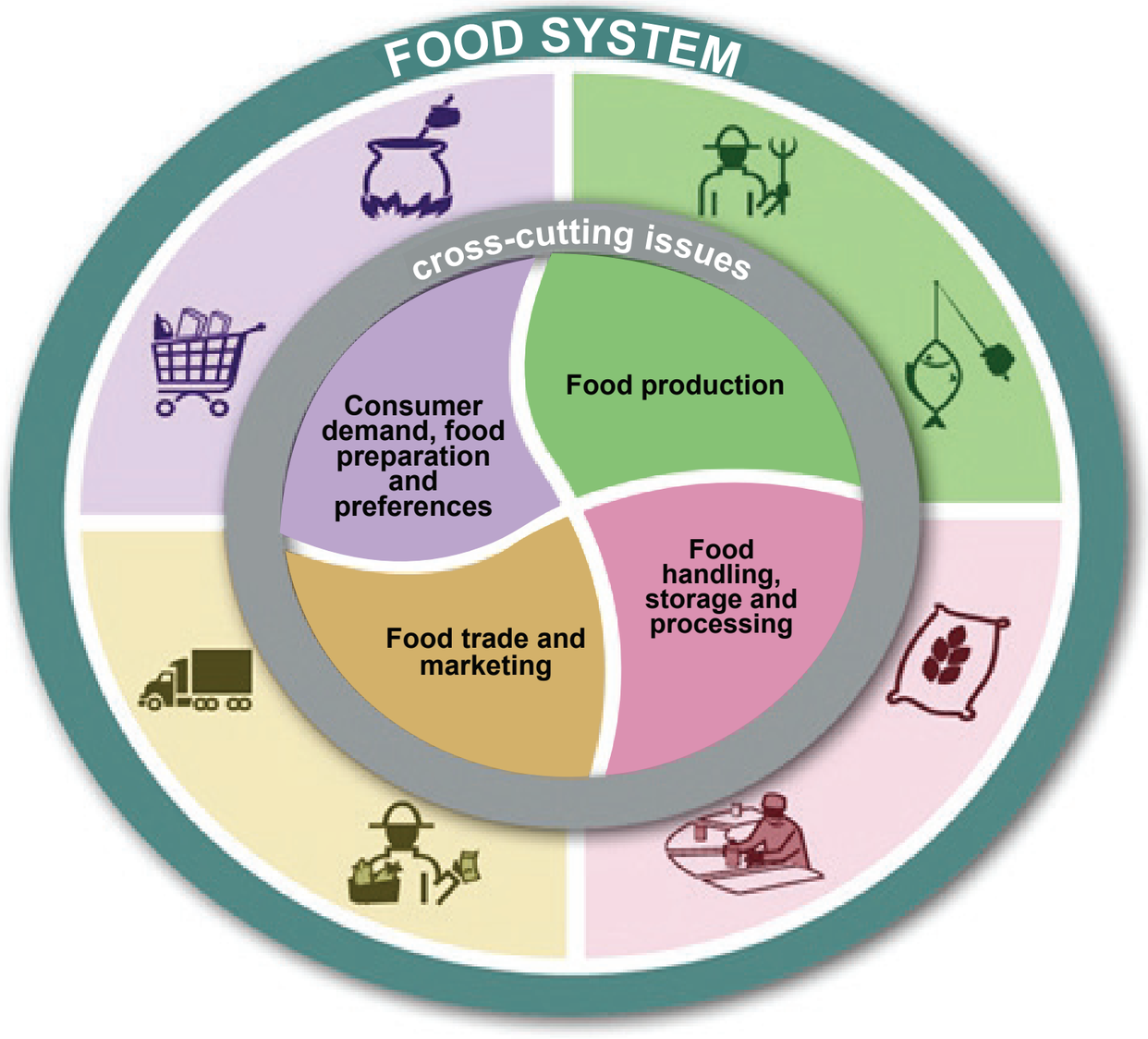
gain
Global Alliance for
Improved Nutrition

SIMPLE IRRIGATION TECHNIQUES

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

FOODSYSTEMS WHEEL



The functions of food systems include

Food production
Food handling Storage and Processing
Food trade and marketing
Consumer Demand Food preparation and Preferences

Source: Adapted from FAO 2016

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

Food production

Food prodcution encompasses a range of activities - and relevant actors - including rural and urban crop production; levestock rearing at small, medium and large scale; fisheries; and forestry.

Food production also requires the underpinning natural resource base (land, water, soil, plants seeds, animal breeds etc.) and supporting infrastructures (e.g. water supply network).

Beyond making food available, food production is critical to sustain rural livelihoods and shaping - positively and negatively - natural environments and landscapes

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

Post-harvest handling, storage and processing

Post-harvest handling, storage and processing are essential to preserve food, help increase shelf-life and limit food losses, which inturn stabilizes food supply and prices throughout the year.

Proper food handling storage and processing also help make food safe, digestible and tasty and broaden the range of food products that can be consumed.
Post-harvest handling, storage and processing include activities at household (e.g. domestic food preservation), community (e.g. village granaries, mills) and commercial levels (e.g. commercial silos, food industries).

Techniques and level of processing from minimal processing (e.g. peeling, freezing or packaging vegetables), to ultra-processing (e.g. production of snacks or soft drinks), to fortification, impact the nutrient content of foods, either positively or negatively.

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

Food trade and marketing

Food trade encompasses exchanges at different levels, including domestic (i.e. within and between rural and urban areas), regional and international (i.e import/export) which serve to bring food to consumers from the locations where it is produced.

Elements of food trade - e.g. quality roads, cold chain during transpotation and at the marketplace, import regulations, prices and price policies, etc. - thus shape the food supply as well as food prices.

Food marketing refers to all activities, actors and related infrastructures and regulations around the physical sale of food (wholesaling, retailing, catering) and its promotion (labelling, pricing, branding and advertising).

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

Consumer demand, food preparation and preferences

Consumer demand shapes decisions on what foods to produce, process and trade.

The main drivers of demand at household level are:

purchasing power →	determined by level of incomes, prices, productivity, wage rates, taxes and cash transfers and remittances.
preferences →	linked to food-related knowledge, attitudes and practices at individual and societal level.

Individual food consumption is influenced by household food preservation, preparation and cooking practices, and intra-household food distribution.

Social protection schemes including subsidies, school feeding programmes, consumer education can be crucial for supporting consumer demand and consumption.

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

KEY INTERVENTIONS BY FOOD SYSTEMS FUNCTION

Function of the food system	Key intervention
Food Production	• Diversification and sustainable intensification of agricultural production
	• Nutrition-sensitive livestock andfisheries
	• Biodiversity for food and nutrition
	• Biofortification
Post-Harvest Handling Processing and Storage	• Nutrition-sensitive post-harvest handling, storage and processing
	• Food fortification
Food trade and marketing	• Trade for nutrition
	• Food marketing and advertising practices
	• Food price policies for promoting healthy diets
	• Food labelling
Consumer demand, food preparation and preferences	• Nutrition education and behaviour change communication
	• Income generation for nutrition
	• Nutrition-sensitive social protection
	• School food and nutrition
	• Nutrition-sensitive humanitarian food assistance
Cross Cutting issues	• Nutrition-sensitive value chains
	• Women's empowerment and gender equality
	• Food loss and waste: prevention, reduction and management
	• Food quality, safety and hygiene

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain Global Alliance for Improved Nutrition

EXAMPLES OF FOOD GROUPS AND FOODS USED TO DETERMINE DIETERY DIVERSITY

Food Group	Examples
CEREALS	Corn, maize, rice, sorghum, millet or any other grains or food made from these (e.g. bread, noodles, porridges, or other grain products) *+ insert local foods e.g. bushera, malwa,* etc
WHITE ROOTS AND TUBERS	White potatoes, white yam, white cassava, or other foods made from roots
VITAMIN A RICH VEGETABLES AND TUBERS	Pumpkin, carrot, squash or sweet potato, that are orange inside + other locally available vitamin A rich vegetables (e.g. red sweet pepper)
DARK GREEN LEAFY VEGETABLES	Wild forms + locally available vitamin A rich leaves such as amaranth, cassava leaves, kale/ sukuma wiki, spinach etc
OTHER VEGETABLES	Tomatoes, onions, eggplant, + other locally available vegetables
VITAMIN A RICH FRUITS	Ripe mango, cantaloupe, apricot, ripe pawpaw, dried peach, 100% fruit juice made from these + other locally available vitamin A rich fruits
OTHER FRUITS	wild fruits, and 100% fruit juice made from these fruits
ORGAN MEAT	Liver, kidney, ear or other organ meats or blood based foods
FLESH MEATS	Beef, pork, lamb, goat, rabbit, game, chicken, duck, other birds, insects
EGGS	Eggs from chicken, duck, guinea fowl, or any other eggs
FISH AND SEA FOOD	Fresh or dried fish or shellfish
LEGUMES, NUTS AND SEEDS	Dried beans, dried peas, len⊘ls, nuts, seeds, or foods made from these (e.g. peanut bu⊘er)
MILK AND MILK PRODUCTS	Milk, cheese, yoghurt or other milk products
OILS AND FATS	Oil, fats or bu⊘er, added to food or used for cooking
SWEETS	Sugar, honey, sweetened soda, or sweetened juice drinks, sugary foods such as chocolates, candies, cookies, and cakes
SPICES, CONDIMENTS AND BEVERAGES	Spices, (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, ginger, alcoholic beverages

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

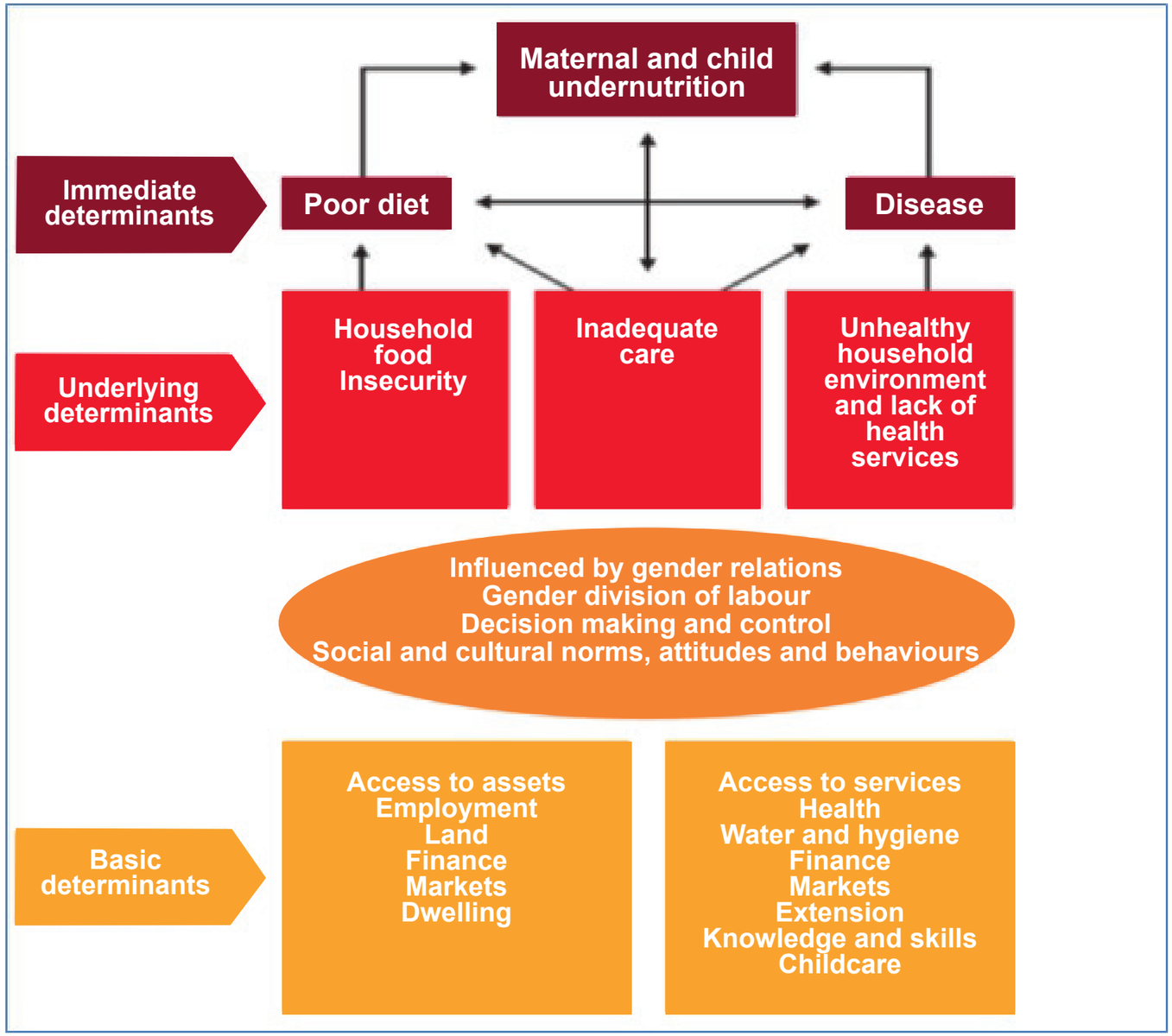
TECHNOLOGIES AND PHASES OF THE POST-HARVEST SYSTEM FOR GRAIN

Outcome	Strategy Criteria	Example of Strategies
Improved availability of diverse, nutrient-rich foods	Increase the supply of a nutrient-rich food in local markets	Link dairy farmers to milk collection centers
		Promote inter-cropping and other practices to diversify home production
	Extend the shelf life a nutrient-rich food is available in local markets	Use improved storage methods to lengthen shelf life
		Promote community warehouse systems to safely store commodities closer to market for longer periods of time
Improved affordability of diverse, nutrient-rich foods in local markets	Reduce prices for nutrient-rich foods	Increase safe storage options to avoid price spikes during off-season
		Package foods to sell in smaller quantities
	Increase purchasing power of target beneficiaries	Promote savings and lending opportunities to improve year-round cash flow
		Promote cost-savings for inputs through use of organic or low-input farming practices
Improved desirability of diverse, nutrient-rich foods among target consumers, especially poor and vulnerable households	Build demand for nutrient-rich foods	Market the health benefit of consuming high-iron beans or other nutrient-rich foods
		Conduct advertising campaigns within local markets to introduce and promote consumption of nutrient-rich foods
	Increase convenience of nutrient-rich foods	Dry and preserve fruit and vegetables so they have longer shelf-life
		Encourage packaging of especially perishable nutrient-rich foods in smaller quantitiesein order to reduce waste and improve ease of preparation
Improved environmental and food safety	It looks like we are only targe&#65533;ng the human being	Use of protective clothing when applying pesticides, herbicides and fertilizers

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain Global Alliance for Improved Nutrition

IMPACT PATHWAYS FOR NSVC ON MATERNAL AND CHILD HEALTH



COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain Global Alliance for Improved Nutrition

ANALYZING NUTRITION SENSITIVE VALUE CHAINS

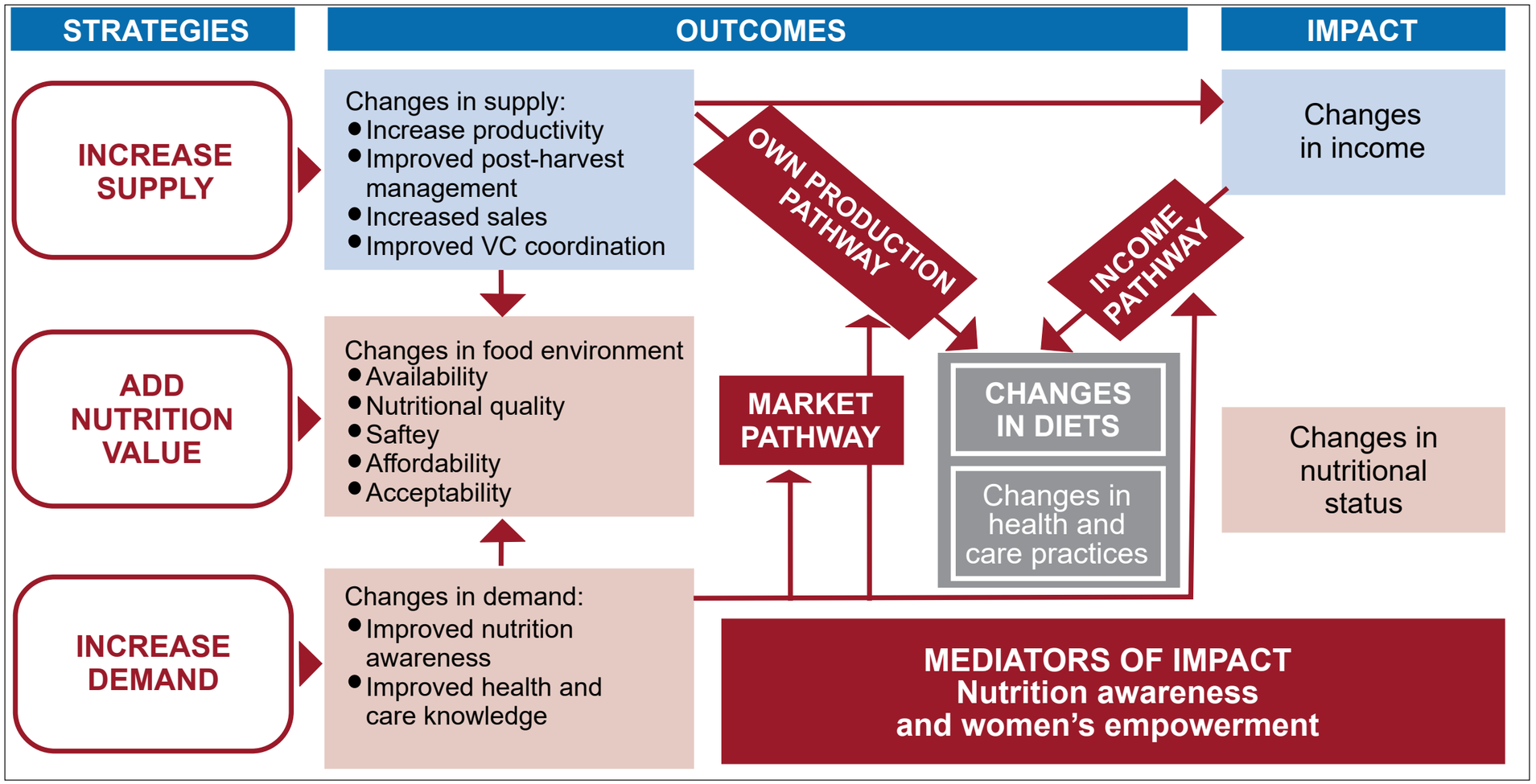
STEP 1: Nutrition situation analysis	STEP 2: Commodity selection	STEP 3: NSVC analysis	STEP 4: Intervention options
• Nutritional status • Causes of malnutrition • Diet characterization and identification of diet gaps	Selection criteria: • Nutrition-improvement potential • Market potential • Income-generation potential • Gender • Environment and climate	• VC mapping and characterization • Analysis of constraints and opportunities in: - Supply - Nutrition value - Demand	• Types of intervention • Cost-effectiveness • Target group • Tensions and trade-offs

Source EU (2017)

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

IMPACT PATHWAYS OF NSVC PROJECTS FROM A SMALLHOLDER PERSPECTIVE

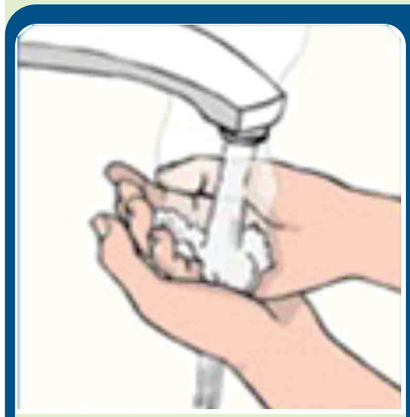


Adapted from FAO

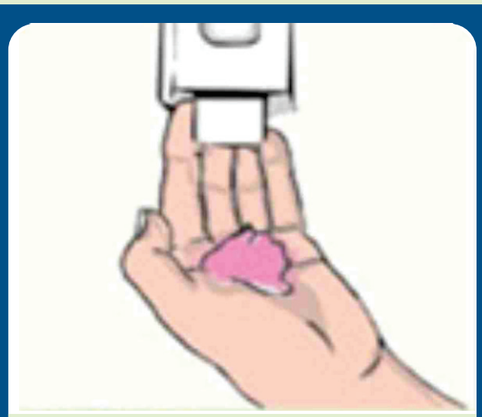
COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

How to wash your hands properly

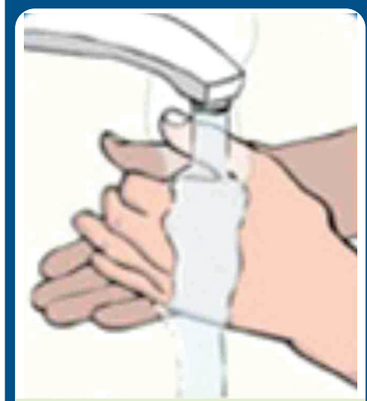


1 Wet your hands

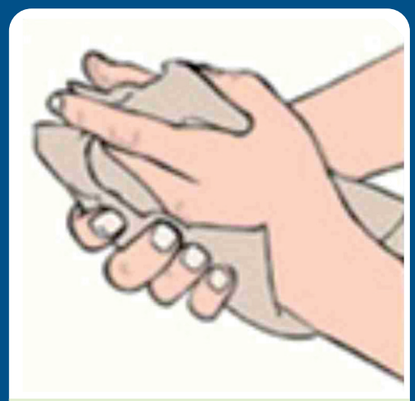


2 Liquid soap

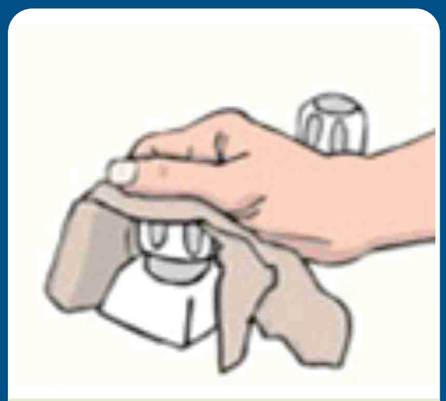
3 Lather and scrub - 20 sec



4 Rinse-10 sec



5 Dry your hands



6 Turn off tap

DON'T FORGET TO WASH:

- between your fingers
- under your nails
- the tops of your hands

Adapted from FAO

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

PHYSICAL HAZARDS IN FOOD

Bidis and Cigarettes

Hair

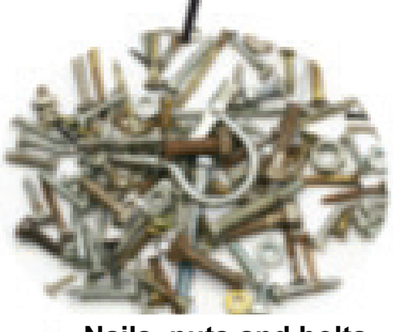
Stones

Stems and seeds

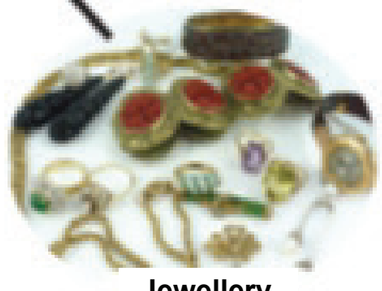
Buttons

Bones, Fragments, Feathers

Strings, jute fibres



Nails, nuts and bolts



Jewellery

Matchsticks

Adapted from FAO

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

CHEMICAL CONTAMINATION

This can occur in variety of ways at different stages of food processing and production. Some examples are;
Chemicals from the farm
Cleaning products used in the processing plant when packaging
Fly spray used in the kitchen when preparing food.
Care must be taken to prevent chemical contamination.at each stage of food production

Chemical Contamination - examples include; cleaning chemicals, pesticides, paints, heavy metals and too much food additive

You may be able to smell or taste chemicals in food

Chemical contaminants in Food
Chemical contaminants may be grouped as:

Agrochemicals which include:
Cleaning chemicals
Fertilizers residues,
Pesticides residues

Veterinary drug residues
Growth promoters
Heavy metals
Food additives
Natural toxins from plants, fungi, fish and microorganisms)

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain Global Alliance for Improved Nutrition

Microbial contamination

Microbes include bacteria, viruses and fungi such as moulds and yeasts.
Microbes are so small that may only be seen by a microscope

Microbiological Contamination - microbes are on our bodies, waste bins, animals, pests, raw meat, unwashed fruits and unwashed vegetables and many other places

You cannot see, smell or taste microbes in food.

Food Poisoning

Foodborne illness, more commonly referred to as food poisoning, is the result of eating contaminated, spoiled, or toxic food. The most common symptoms of food poisoning include nausea, vomiting, and diarrhea.

Common cases of food poisoning will typically include at least three of the following symptoms:
Abdominal cramps
Diarrhea
Vomiting
Loss of appetite
Mild fever
Weakness
Nausea
Headaches

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

AFLATOXINS CONTAMINATION ON MAIZE

Contaminated poultry feed fed to birds can contaminate chicken, meat and eggs and if eaten by humans can cause disease.

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

What is the Food Poisoning Chain?

1. Food poisoning is the end result of a chain events
2. Break the chain by:
   - Reducing contamination by washing your hands, using clean utensils and covering food.
   - Storing potentially hazardous food as safe temperature of at or above 60^{0}C or at or below 5^{0}C

MICROBES

1. Microbes come from humans. animals and posts, raw meal, unwashed fruit and vegetables

CONTAMINATED FOOD

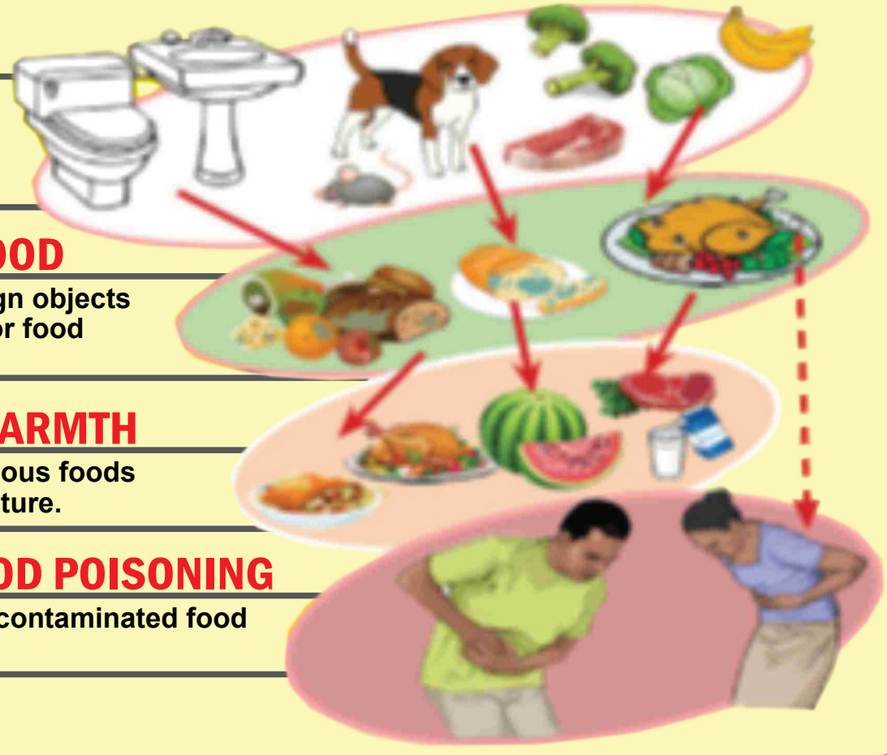
2. Microbes chemicals and foreign objects contaminate food through poor food handling.

TIME AND WARMTH

3. Microbes on potentially hazardous foods multiply quickly in the temperature.

FOOD POISONING

4. Food poisoning occurs when contaminated food is eaten.



Food Poisoning is the end result of a chain of events. This chain can be broken by; Reducing contamination through washing hands, using clean utensils and covering food Storing potentially hazardous foods at safe temperatures of at or above 60 0C or at or below 6 0C

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

WAYS TO REDUCE PESTICIDE RESIDUE INTAKE

• Trim Fat from meat and remove skin from poultry and fish	• Peel waxed Fruit and vegetables ; waxes don't wash off and can seal in pesticides
• Discard Fats and oils in broths and pan drippings. (Pesticide residues concentrate in the animals fat)	• Peel vegetables such as carrots and fruits such as apples when appropriate.(peeling removes pesticides that remain in or on the peel but also removes fibers vitamins and minerals
• Select fruits and Vegetables with intact skins	• Consider buying certified organic foods
• Wash Fresh Produces in warm running water. Use a scrub brush and rinse thoroughly	• Use a knife to peel oranges or grapefruit. Do not bite into the peel
• Discard the outer leaves of cabbage and lettuce	

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

TECHNOLOGIES AND PHASES OF THE POST-HARVEST SYSTEM FOR GRAINS

Post-Harvest Opera□ons	Traditional Technologies	Intermeditary Technologies	Industrial Technologies
Harvest	Manual	Manual and mechanized	Mechanized
Pre-drying	Standing or in shocks	Incribs or in shocks	
Storage in the ear	In traditional	In cribs granaries	
Threshing	Manual	Mechanized	Mechanized
Pre-cleaning		Mechanized	Mechanized
Drying	Natural	Artificial	Artificial
Cleaning and sorting	Winnowing in the wind	Mechanized	Mechanized
Storage in grains	In traditonal granaries	In bags or in bulk	In bags or in bulk
Processing	Manual	Mechanized	Mechanized

COMMUNITY WOMEN'S ENTERPRISE NETWORK

gain
Global Alliance for Improved Nutrition

MOISTURE CONTENT AND PHYSICAL CHARACTERISTICS OF GRAIN

GRAINS	MOISTURE	PHYSICAL CHARACTERISTICS
Rice	22-28%	The panicles bend with their own weight, yellowed hulls, full grains, neither too ripe (cracked), nor too green.
Maize	23-28%	Cobs almost dry, hard and glassy kernels resistant to scoring with the thumbnail, black dot in the caryopsis.
Sorghum	20-25%	Dried stems and leaves, hard grains resistant to the thumbnail, glassiness depending on variety.
Beans	30-40%	Pods ripe and yellow, shells dried, skins of kernels easily detached.
Groundnuts	30-35%	Leaves yellow, shells dried, skins of kemels easily detached.
Sunflower	9-10%	Upper leaves dry and flower faded.

COMMUNITY WOMEN'S
ENTERPRISE NETWORK

gain
Global Alliance for
Improved Nutrition

STORAGE FOOD CONTAINERS

Modern Grain Storage in sacks

Traditional Storage

Food storage containers