

OPERATIONAL RESEARCH ON AGRICULTURE-NUTRITION LINKAGES
IN SIERRA LEONE: FINDINGS AND RECOMMENDATIONS FOR
IMPROVING NUTRITIONAL IMPACTS

By

Edward R. Rhodes

Consultant/ Research Coordinator, Sierra Leone Agricultural
Research Institute (SLARI)

Operational research objectives and key partnerships

The overall objective of the research was to identify food/agriculture based interventions that contribute to improved nutrition and have potential for scaling up

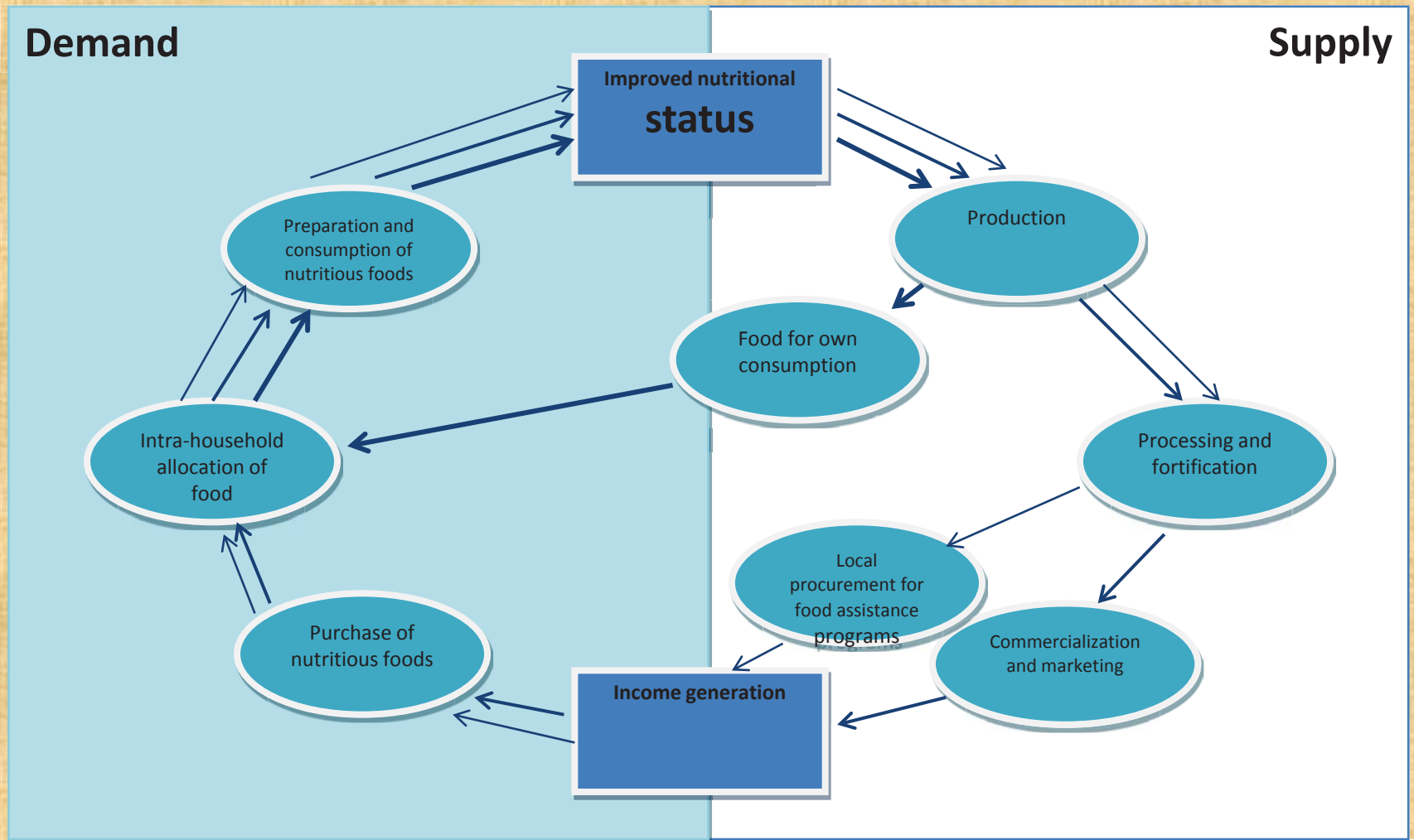
- The REACH partnership collaborated with:
 - Sierra Leone Agricultural Research Institute,
 - Njala University,
 - Ministry of Agriculture Forestry and Food Security
 - Ministry of Health and Sanitation
 - Wageningen University and Research Centre

Components of the Research

The research consisted of 3 components:

- A desk review of knowledge on the linkages between small holder value chain and nutrition programming.
- A broad mapping of the potential key stakeholders and their roles and linkages in small holder value chains in Sierra Leone.
- An in-depth study of small holder farmers focusing on nutritional impacts of rice and vegetables value chain development and entry points for improvement

Components of the REACH smallholder value chain model linking supply and demand for nutritious foods at household level



Smallholder value chain component



Impact to smallholders



Direct pathway relating improved nutrition to subsistence-oriented production for the household's own consumption



Indirect pathway relating improved nutrition to income generated from the sale of agricultural products



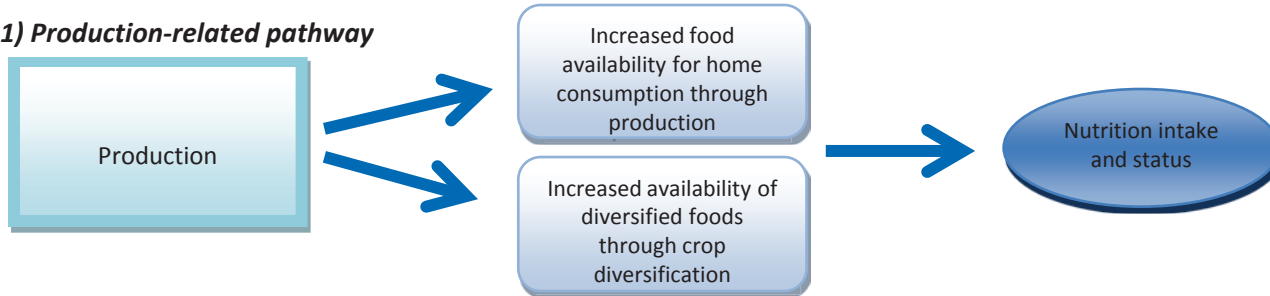
Indirect pathway relating improved nutrition to income generated from local procurement of nutritious foods produced by smallholder farmers that are to be distributed through food assistance programmes

METHODOLOGY

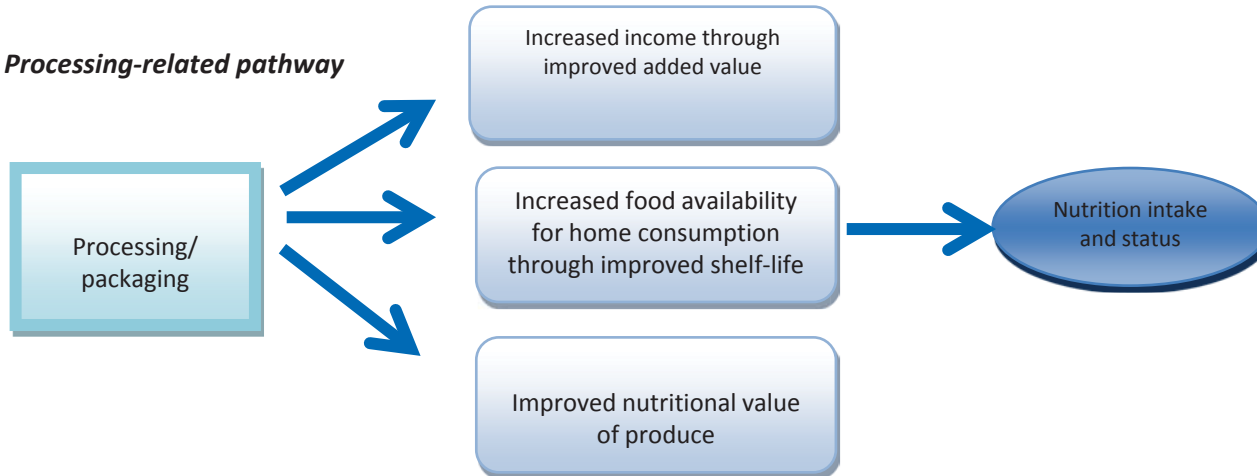
- Key informant interviews involving public and private sector organizations working on agriculture and nutrition projects
- Focus group discussions at community level involving small holder producers, processors, marketers, consumers in 4 districts for the broad mapping and 2 districts that are very important for rice and vegetable production for the indepth study

Potential pathways linking different components of agricultural value chain interventions to improved nutrition

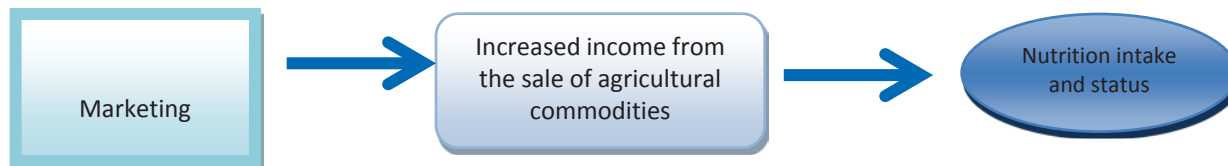
1) Production-related pathway



2) Processing-related pathway



3) Marketing-related pathway



Findings

A: Challenges Related to Production Aspect

Rice Value Chain

- Limited access to inputs, credit, storage, hired labour, extension service
- Poor soil fertility
- Suspect quality of fertilizers and pesticides
- High illiteracy levels

Vegetable Value chain

- Continuous cropping and burning of vegetation leading to soil nutrient depletion
- Poor irrigation systems for dry season cultivation
- Most inputs e.g. fertilizers are sold in quantities that farmers cannot afford
- Improved seeds are expensive and supply is not timely
- Problems in accessing hired labour due to high costs and that farming is not attractive to youths

Findings

B: Challenges Related To Processing/packaging Aspect

Rice Value Chain

- Rudimentary parboiling methods
- Inadequate drying floors increasing the chances of contamination
- Wastage due to Inadequate milling, attack by storage pests
- Inadequate storage facilities, limited milling machines
- Inadequate knowledge on operating milling machines

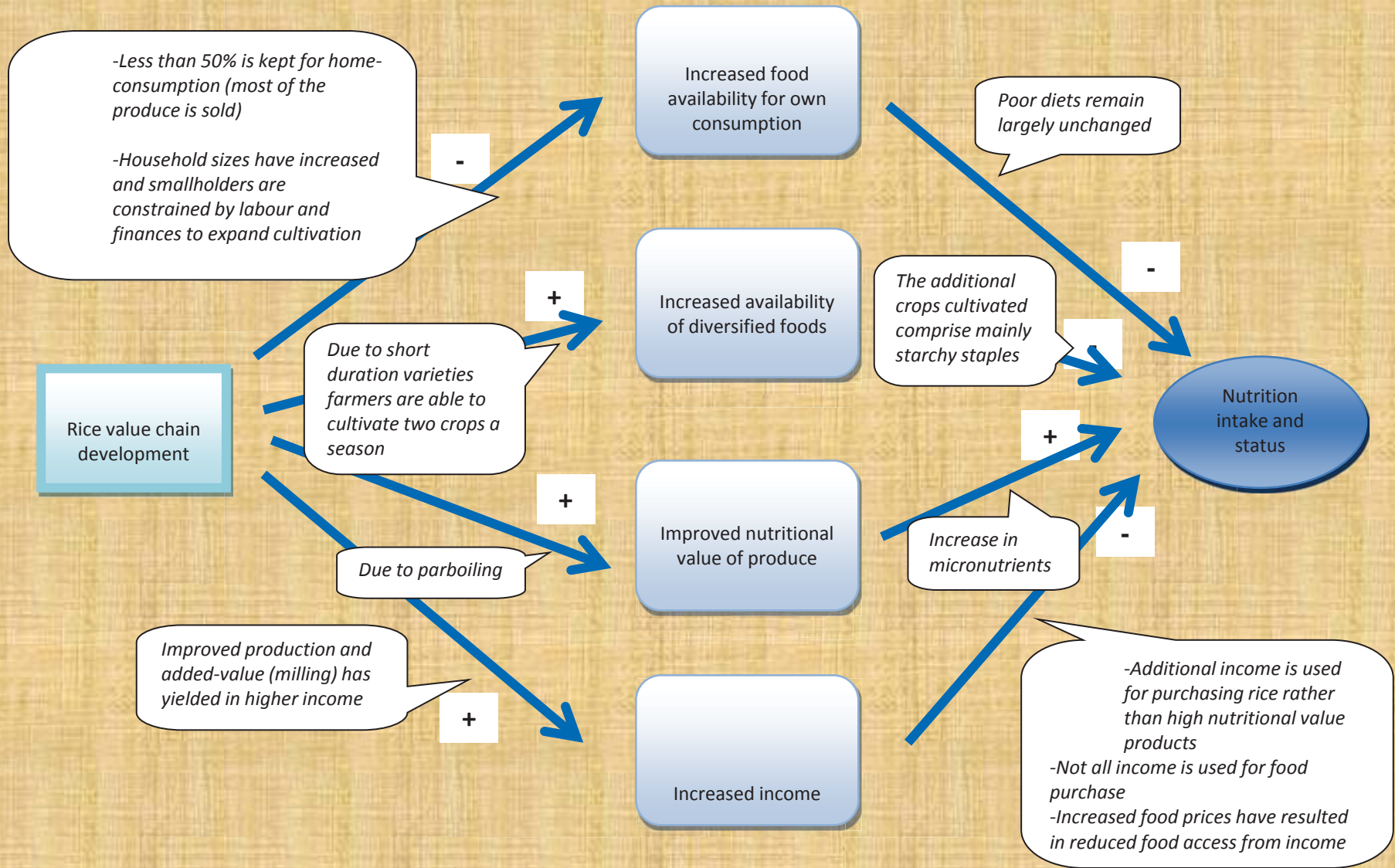
Vegetable Value Chain

- Processing equipment is not available within the country
- Lack of cool rooms
- Lack of funds to procure packaging materials(bags, boxes, baskets)

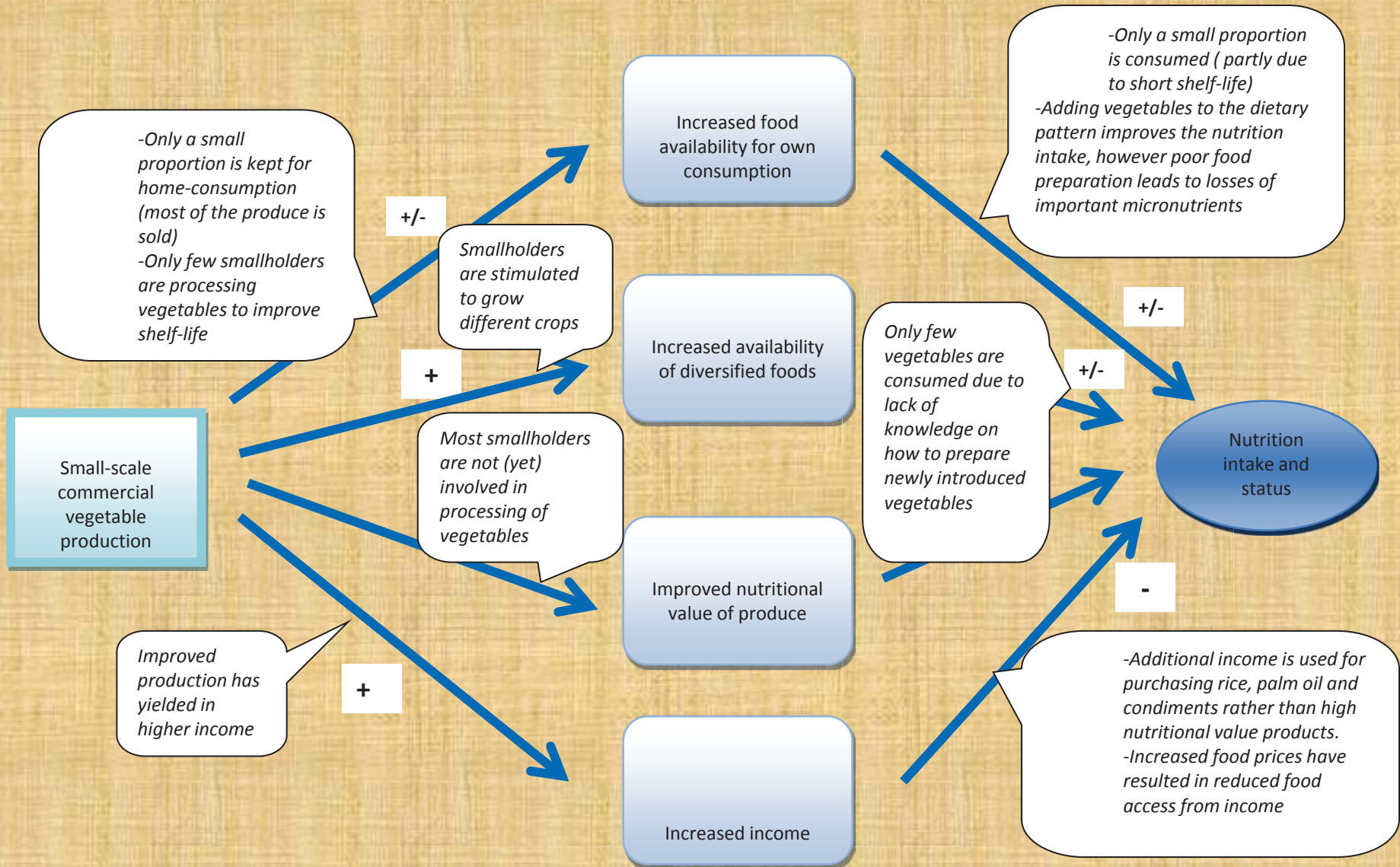
C: Challenges Related To Marketing Aspect of Rice Value Chain:

| Rice Value Chain | Vegetable Value Chain |
|--|--|
| <ul style="list-style-type: none">• Half of the income from rice sale is used on purchase of starchy foods• Poor road network• Distress sale of rice• Increasing prices of food that is not produced by the household itself.• Smuggling of Rice Across Border to Guinea | <ul style="list-style-type: none">• Lack of transport• Poor road network, some villages may be cut off due to flooded roads• Lack of storage facilities• Poor prices for farmers; prices dictated by wholesalers and traders, vegetables have to be sold very soon after harvest• High spoilage since there are no cooling facilities and most of vegetables are sold in Freetown, several kilometers away |

Actual pathways linking rice value chain development interventions to nutrition in the context of Sierra Leone



Actual pathways linking small-scale commercial vegetable production to nutrition in the context of Sierra Leone



Findings

D: Challenges related to coordination

- Efforts of organizations involved in agriculture/nutrition are not evenly distributed around the country
- Interventions of some organizations are overlapping

However,

- Government and NGO's are making efforts to organize farmers to improve productivity

CONCLUSION

- Initiatives along the value chain have contributed to improved production and income
- They have not translated into improved nutrition uptake and status.
- This is probably due to the fact that nutritional considerations are not an integral part of these interventions and also because it takes time to change behavior.

Application of research findings and recommendations (Sierra Leone context and similar situations)

1. Nutrition Education to enhance consumption of nutritious foods by
 - integrating nutrition interventions with extension messages
 - Providing nutrition education through community facilities
 - Scaling up the establishment of school gardens

2. Improving food diversity
 - Promote multiple-cropping including short duration varieties and vegetables
 - Promote integrated farming
 - Promote small livestock production and fishing
 - Promoting back yard gardens

3. Improving nutritional value of the staple food
 - Use fertiliser for micronutrient (Zn) enriched rice
 - Cross breed rice for higher micronutrient content
 - Investigate timing of rice harvest for higher protein content

Application of research findings and recommendations (Sierra Leone context and similar situations)

4. Improving storage ,processing and packaging capacity

- Promote improved parboiling of rice and investigate feasibility of fortification with Zn and Fe during parboiling
- Introduce new technologies of rice and vegetable processing and packaging
- Increase access to storage and drying facilities and appropriate processing and packaging equipment (e.g. through ABCs/FBOs.)
- Support agro-industries development (infant/small scale)

5. Improving market access

- Scale up purchase for progress to more districts
- Add value to produce through processing
- Upscale feeder roads intervention linking production to market/ABCs

continuation

6. Gender sensitive programming

- Promote the level of control of resources accrued from agricultural production by women
- Ensure women's access to credit /loans scheme to support farming activities esp. vegetable gardening.
- Strengthen the participation of women in extension services and facilitate inputs to women involved in backyard gardening
- Train women on nutritional content, value and preparation of the food they grow
- Promote social support services and mechanization to reduce the labour demand on women

Application of research findings and recommendations (Sierra Leone context and similar situations)

7. Regulatory frameworks and legislation

- Bureau of standards to ensure quality control on all imported pesticides and fertilizers.
- Reduce taxes on agricultural inputs to reduce cost of production and make nutritious food affordable.
- Adopt approaches that can empower farmers to reduce dependency on donors.
- Enact legislation to ensure there are no restrictive procedures for borrowing - collateral which women can not comply with
- Ensure that on-going land policy reform provides for access and ownership of land by women.

8. Supportive measures and policy implications

- Strengthen extension services
- Strengthen research services
- Improve access to credit /loans
- Improve coordination among all key stakeholders
- Improve information management

END OF PRESENTATION
THANK YOU