



How can we turn waste into abundance? What if your produce came to you? How might we transition into the next food epoch? Aside from money, what would people contribute to food systems? How many people can Canada feed? What causes friction in making sustainable food choices? Do we need everything all the time? Could a vegetable choose you? How far can local produce get us? Can we democratize the notion of organic produce? How can we bring academia and science to farmers? Can we design an instant channel between tech innovation and farmers? What is a MakerSpace for farmers? What is a Community Link? What measurement tools are available to gauge a successful food system?

## DESIGNING: **THE RESILIENT LINK**

CONNECTING **LOCAL PRODUCERS**  
TO **LOCAL CONSUMERS** IN THE  
CONTEXT OF SOUTHWEST BC 2016

A Research Project of



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## THE RESILIENT LINK

D+FA, Design + Food Atelier, is a research group comprised of students and faculty of the Wilson School of Design - Product Design program at Kwantlen Polytechnic University focusing on problems related to food systems.

The project *Designing the Resilient Link* is inspired by research projects conducted by the Institute of Sustainable Food Systems at KPU, and it addresses issues with local food hubs — organizations meant to provide support to local farmers and improve connections between local producers and consumers.

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# INTENT: THE RESILIENT LINK

## PROBLEMS IDENTIFIED IN EXISTING FOOD HUB CONCEPTS

This project is based on two-fold research. The first part was done through observations and reviews of case studies on food hubs in the United States, and the food hub projects in BC. The second part of the research was done through theoretical analysis and reflections upon current publications and social media. Design Thinking methodology was employed as the approach to designing a prototype for a resilient system to support and educate local farmers, to make one more step towards a sustainable food future.

Rather than giving a final solution, *Designing the Resilient Link* serves as a design process

through which potential for new solutions in local food systems can be explored and new problems identified.

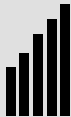
Through this design, our team aims to facilitate a new iterative process – a continuous dialogue surrounding socio-cultural and ecological sustainability in local food systems, not just within agricultural circles, but among designers, scientists and policy makers.



Ecological



Economic



Socio-Cultural



“...imagined worlds, that is, the multiple worlds that are constituted by the historically situated imaginations of persons and groups spread around the globe. An important fact of the world we live in today is that many persons on the globe live in such imagined worlds (and not just imagined communities) and thus are able to contest and sometimes to subvert the imagined worlds of the official mind and of the entrepreneurial mentality that surround them.

(Appadurai, 1996).

# DEFINE: THE STATE OF FOOD

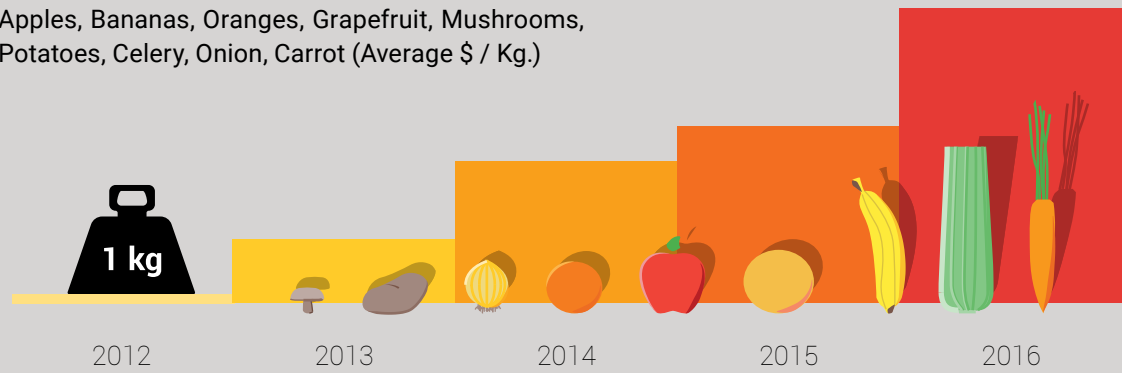
## IDENTIFIED PROBLEMS IN SOUTH WEST BC FOOD SYSTEM

At the onset of this research project one thing was abundantly clear – there is a problem with our food system. The main problem is that an average consumer does not see the relationship between rising prices and demand, which reflects a basic necessity that seems 'beyond our control'. Among other things, consumer expectations have led to unprecedented spending on imported crops.

Our food sovereignty is tested, as the void between production capacity and population widens. Producers are forced to turn to non-food crops, or sacrifice long-term resilience for short-term dependable opportunities due to challenges facing the market. Southwest British Columbia is a fertile gateway to the rest of the world.

## Canadian Produce Prices

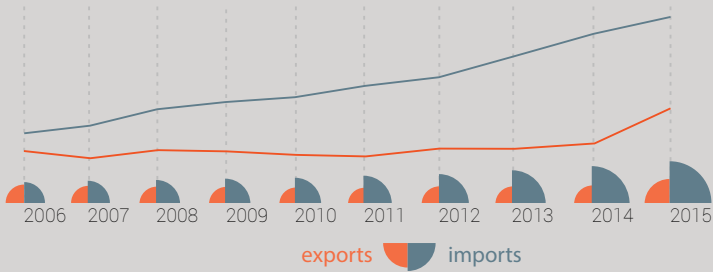
Apples, Bananas, Oranges, Grapefruit, Mushrooms, Potatoes, Celery, Onion, Carrot (Average \$ / Kg.)



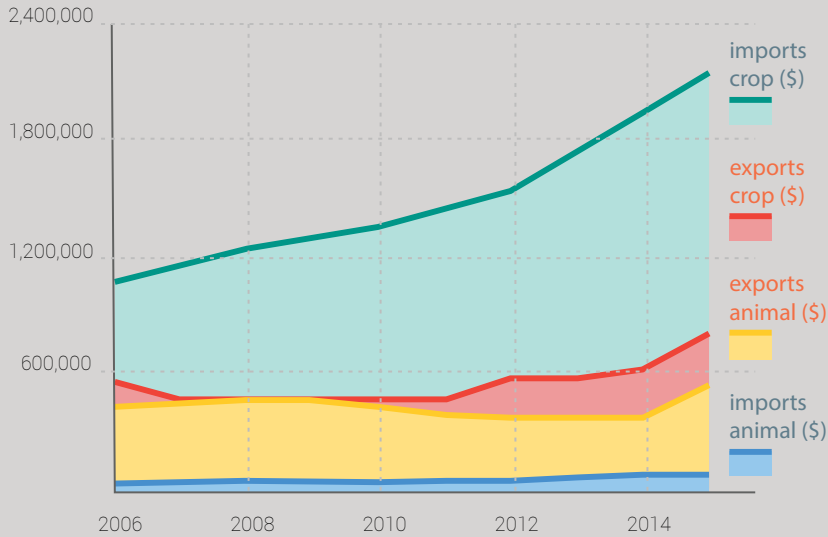
## Canadian Exports & Imports

Trade Data Online, Canada

Produce (\$ in Millions)  
2006 - 2015



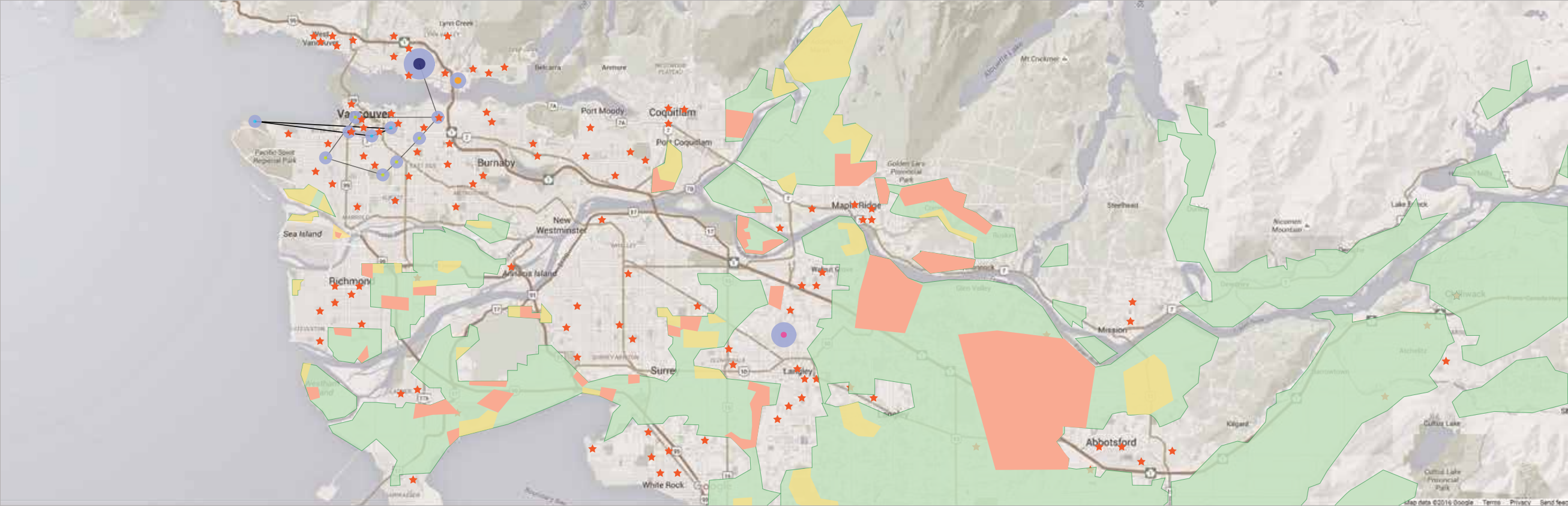
Crop, Animal (\$)  
2006 - 2015



How will expansion of free trade agreements between Canada, EU and Pacific Rim Countries influence these figures?

DEFINE:  
USE OF ALR SWBC 2016

The Agricultural Land Reserve (ALR) is a provincial zone in which agriculture is recognized as the priority use. Farming is encouraged and non-agricultural uses are restricted. Is the concept of ALR a fundamental tenet of resilience?



Unavailable  
25%

Available with Potential  
25%

Farmed  
50%

DEFINE:  
EXISTING SERVICES

MANY SERVICES, MANY SEPARATE CHANNELS

- 'Buy Local' Campaigns
- Community Gardens
- School Farms
- Food Banks
- Farmers Markets
- Food Co-ops
- C.S.A. Programs

Community

- Small Businesses
- Community Kitchens
- Commercial Kitchens
- Urban Farms
- Traditional Techniques
- Restaurants
- Retailers
- Institutions

Processing

A food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers in order to satisfy wholesale, retail, and institutional demand.

source: [www.healthyfoodaccess.org/retail-strategies/food-hubs](http://www.healthyfoodaccess.org/retail-strategies/food-hubs)

- Aggregation
- Distribution
- Storage
- Light Processing
- Brokering
- Marketing
- Labelling
- Packaging
- Waste Management
- Export Logistics

Operational

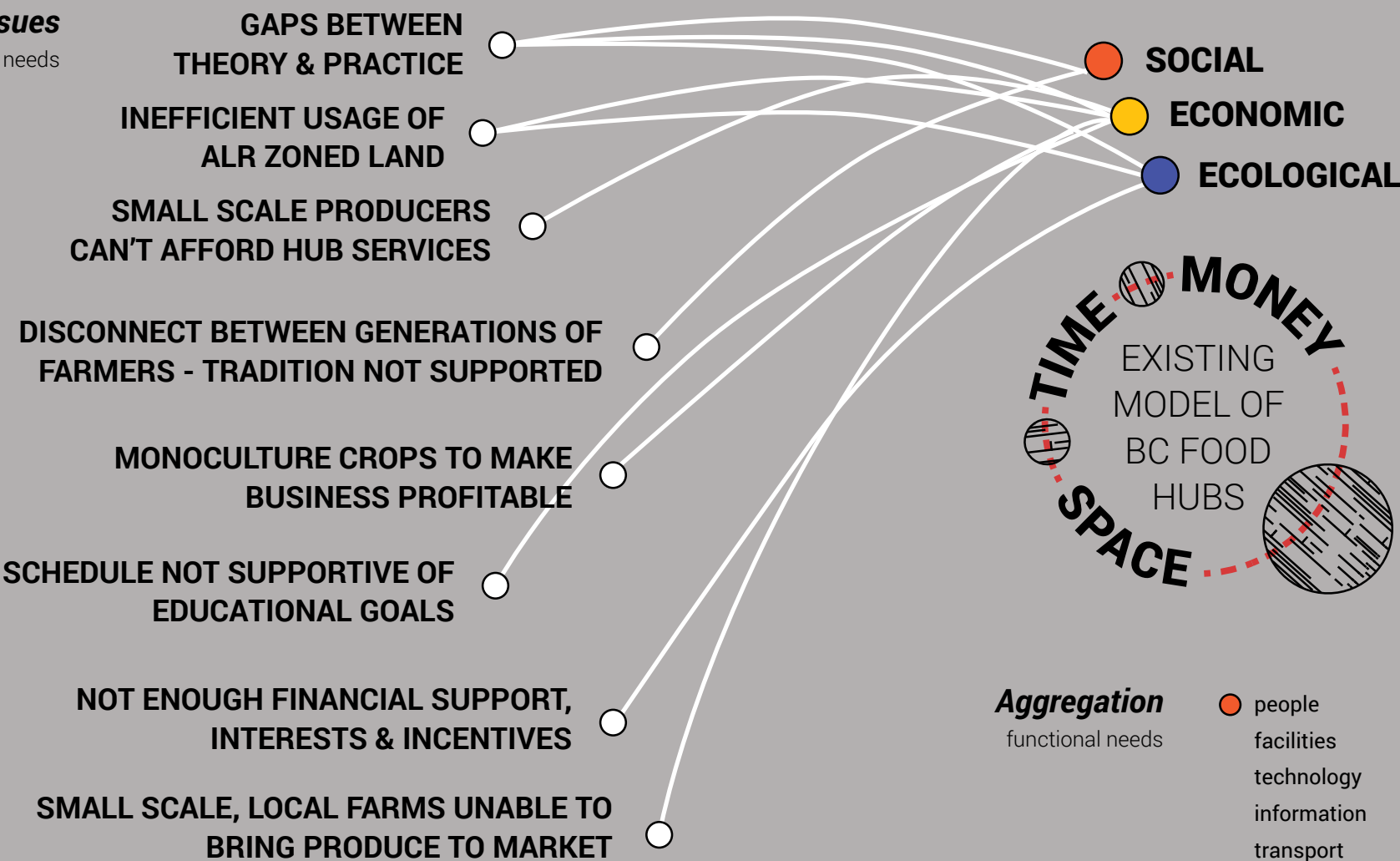
- +
- Connecting to Markets
- On-Farm Pick-Ups
- Post-Harvest Training
- Business Training
- Insurance
- Safety & Certification
- Distribution
- Technical Support
- Financing
- Transport
- Crop Coordination
- Educational Support

Producers



ANALYZE:  
ISSUES IN SWBC FOOD HUBS

How can we provide local farmers with an **ecologically, economically and socially sustainable** system of services to **regenerate** and **support** the local foodscape?



How can we connect **farmers** and **services** to optimize relationships between time and space?

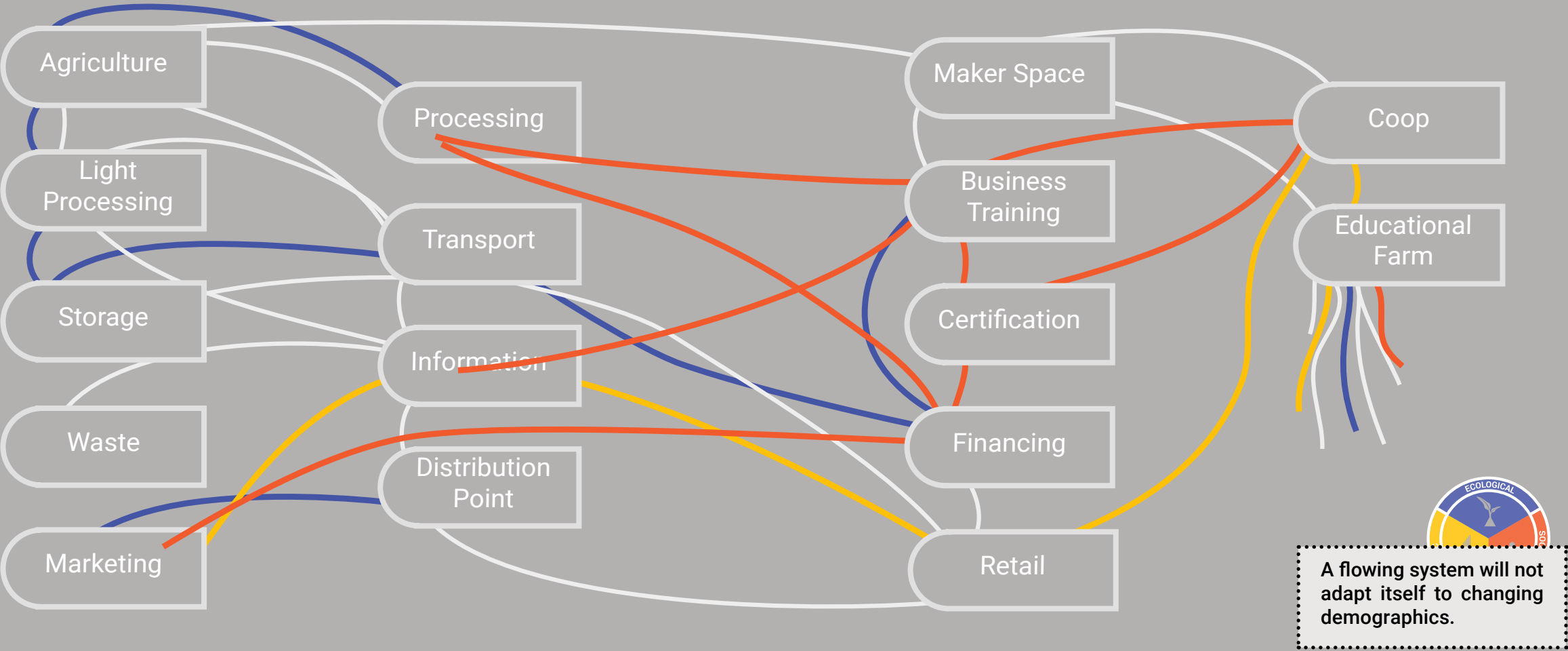
- Processing**  
functional needs
- people
  - equipment
  - facilities
  - information
  - marketing
  - packaging
  - new knowledge
  - clean technologies
  - traditional knowledge

- Aggregation**  
functional needs
- people
  - facilities
  - technology
  - information
  - transport

- Transportation**  
generational needs
- people
  - technology
  - finance
  - information
  - new ideas



ITERATION:  
**HOW TO CONNECT SERVICES**



# SYNTHESIZE: PROPOSED SERVICE MIX FOR FARMERS



Each link is comprised of a contextual bundle of information, resources and facilities. By embracing flexibility as a fundamental tenet of resilience, the links are able to address a broader range of needs for stakeholders in the local food scape.

What are the fundamental tenets of resilience?

Information

Resources

Facilities

- Educational
- Workshops
- FAQs
- How-To's
- Promotion
- Coordination
- Planning

- Tool Rental
- Transport Share
- Planting Supplies
- Harvest Supplies
- Retail
- Packaging

- Light Processing
- Cleaning
- Storage
- Preservation Lab
- Packing Facilities
- Demo Farm

# IDEATION: PROPOSED PRODUCT SERVICE SYSTEM

CREATING A FLEXIBLE NETWORK OF CONTEXTUAL LINKS



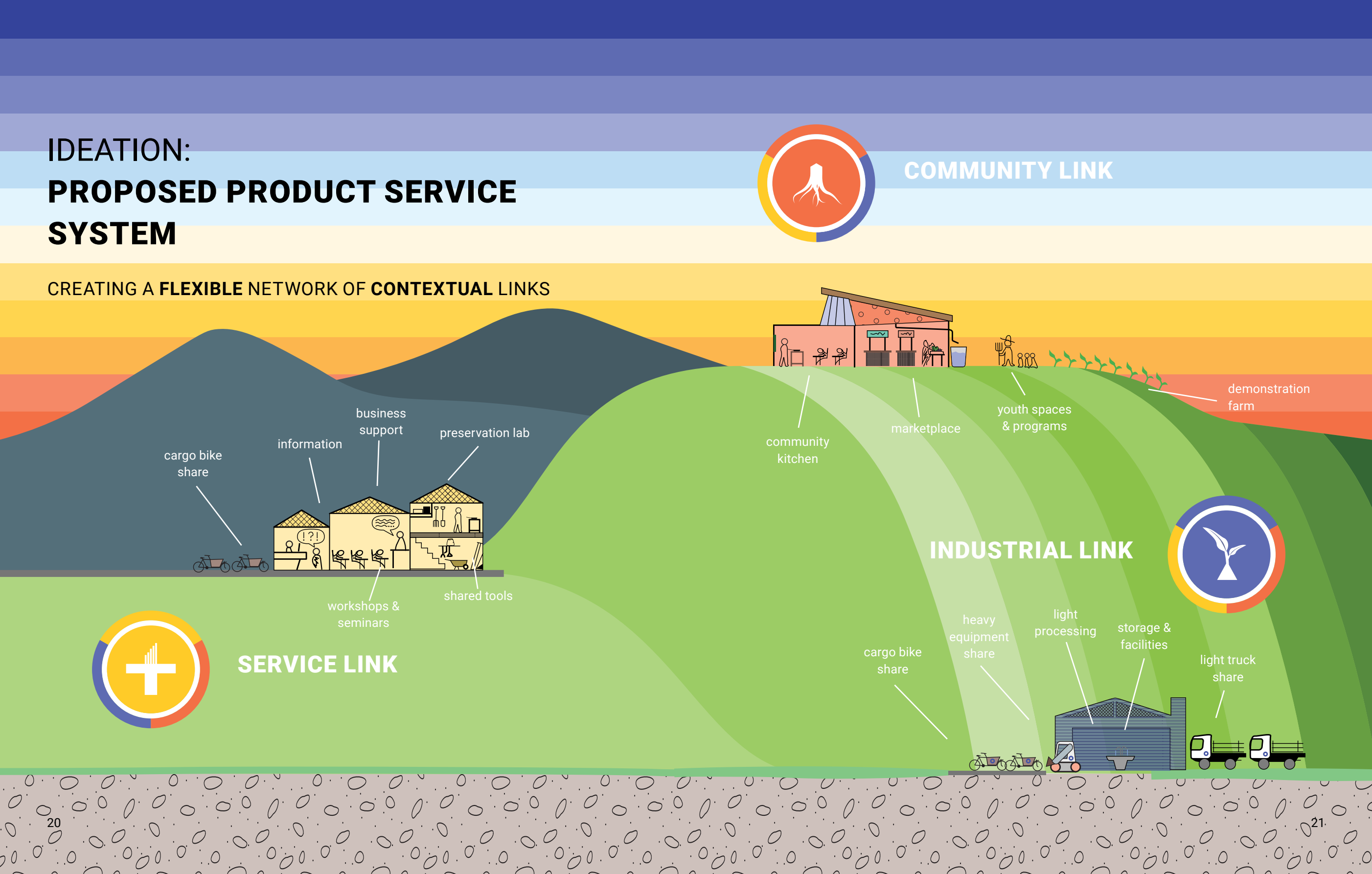
COMMUNITY LINK



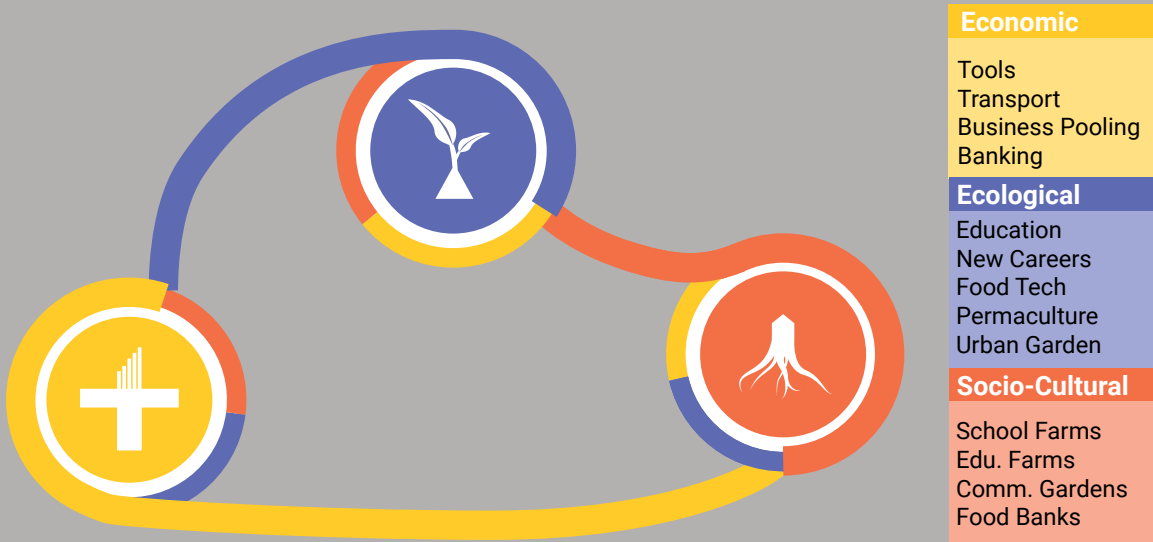
INDUSTRIAL LINK



SERVICE LINK



# IDEATION: FLOWING SYSTEM



A flowing system would provide a range of necessary information, resources and facilities to support small-scale agricultural startups, community involved initiatives and drive grassroots level progress within the food system.

The flowing system consists of three different links. Their specific functions will satisfy the needs of existing farmers, support the goals of small scale start ups and promote a stronger sense of food value within the community.

# IDEATION: SERVICE LINK



## EXPLORE AND CREATE OPPORTUNITIES FOR STARTUPS AND URBAN FARMERS

The **Service Link** promotes a diversified foodscape by making it easy to identify and explore new opportunities within local agriculture. It is a space where people from all walks of life can actively design resilience through diversification and innovation, and new ideas become the new reality.



# IDEATION: INDUSTRIAL LINK

SHARED RESOURCES & FACILITIES TO  
SERVE SURROUNDING ALR ZONES



The **Industrial Link** is out in the field, it houses shared physical assets for small scale producers. Access to tools and a shared fleet greatly reduce start-up costs, risk and barriers to joining the industry. A communal service space creates a foundation for a positive, innovative support network of like-minded agriculturalists.

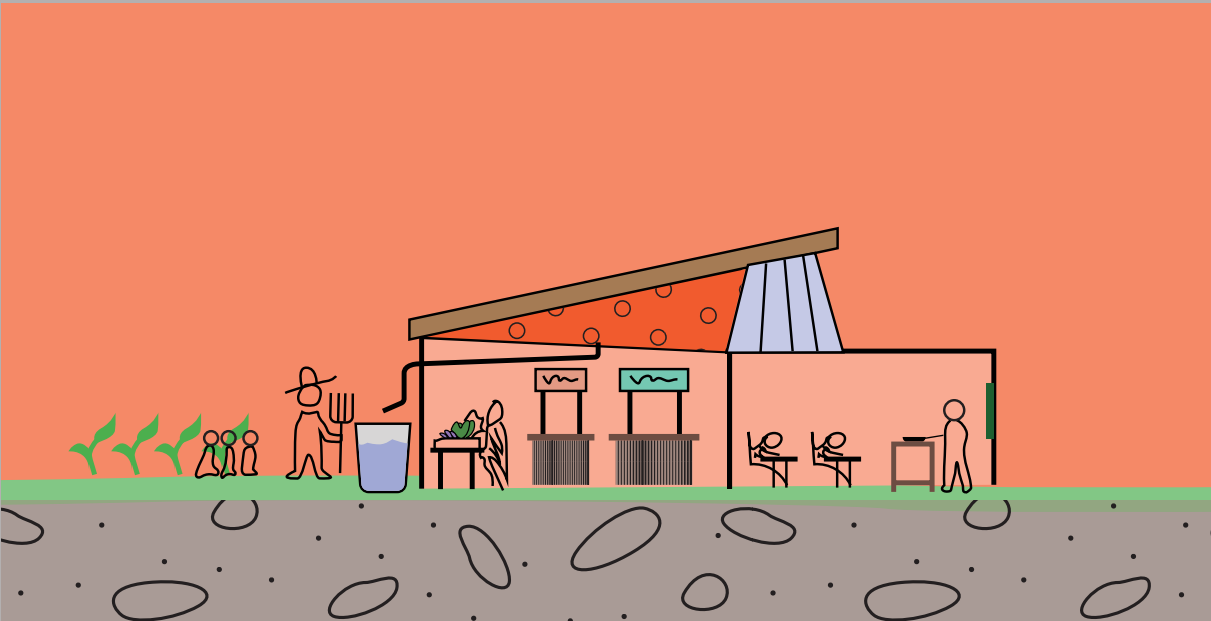


# IDEATION: COMMUNITY LINK

EDUCATION, DEMONSTRATION AND  
DISTRIBUTION AT A COMMUNITY LEVEL



A point where agriculture and those who benefit from its success meet. The **Community Link** is where the narrative of local food begins — creating diverse links to the community. It is a meeting point where knowledge and wisdom are shared, and neighbors cooperate to redefine social and local in the context of food.





PROTOTYPE: STORYBOARD

Dan is an artist and locavore, eager to contribute to his community.

His dream is to run a **specialty farm** and grow unique produce for his girlfriend's growing cafe.



His friends at the farmers market told him about **ALR land**, but he's never planted more than a cactus.



Robert and Judy are recently retired and ready to plant the hobby farm they'd saved for.

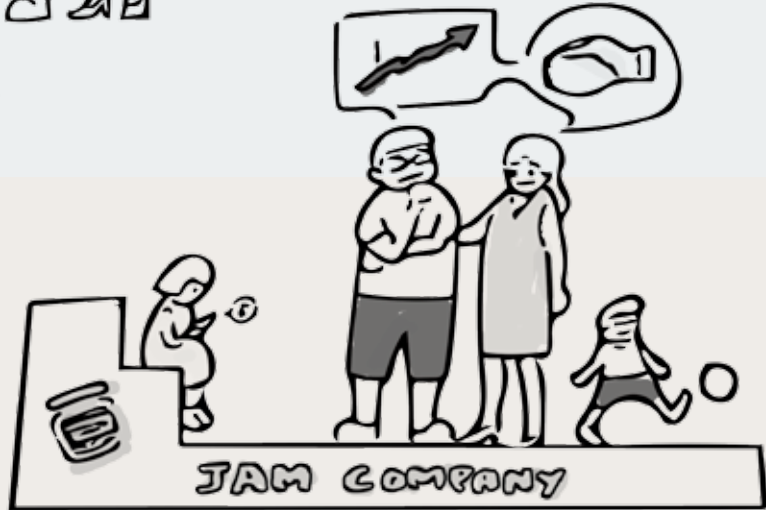
They're confident that they could run a small farm and reach market through Robert's industry connections...



If only there was a **space** and **people**...

Amit and Priya make delicious preserves. Their picky kids' attitudes toward food confuses them, but their rural upbringing was very different.

They want to sell more jam, but Priya insists that serving the local markets is key to **sustainable growth**.



But when Dan found the **Service Link**...

...he found answers to all his questions.



He found like-minded friends and mentors, made a **business plan**, and with his new friends, co-signed a lease for ALR land.



Through the **Industrial Link**...



...But on paper, the **start-up costs** are **too high** for their short-term goal - it is too big a risk.



...they can access communal equipment and shared processing facilities.

It means quicker profits, and social connections with their farm neighbors!

With the **Community Link**...



Amit & Priya can teach their kids about **regional food systems** while building the brand.



They sell only as much as they can make in the community marketplace. Priya gives back by sharing the preservation techniques he mother taught her.

And the kids have something new to be picky about -- they want to be sure it's organic and local!

# PROTOTYPE: FITTING WITHIN LOCAL FOODSCAPE

The Resilient Links are intended to be the bridge connecting local farmers to consumers, and enhancing the effective use of ALRs in Southwest BC. There is clear potential for regions with large amount of ALRs such as Richmond and the Southlands development to implement facilities that further the foodscape. Southlands is an exciting new development with great potential, its proximity to ALR and ambitious development plans are clear opportunities for entrepreneurship.

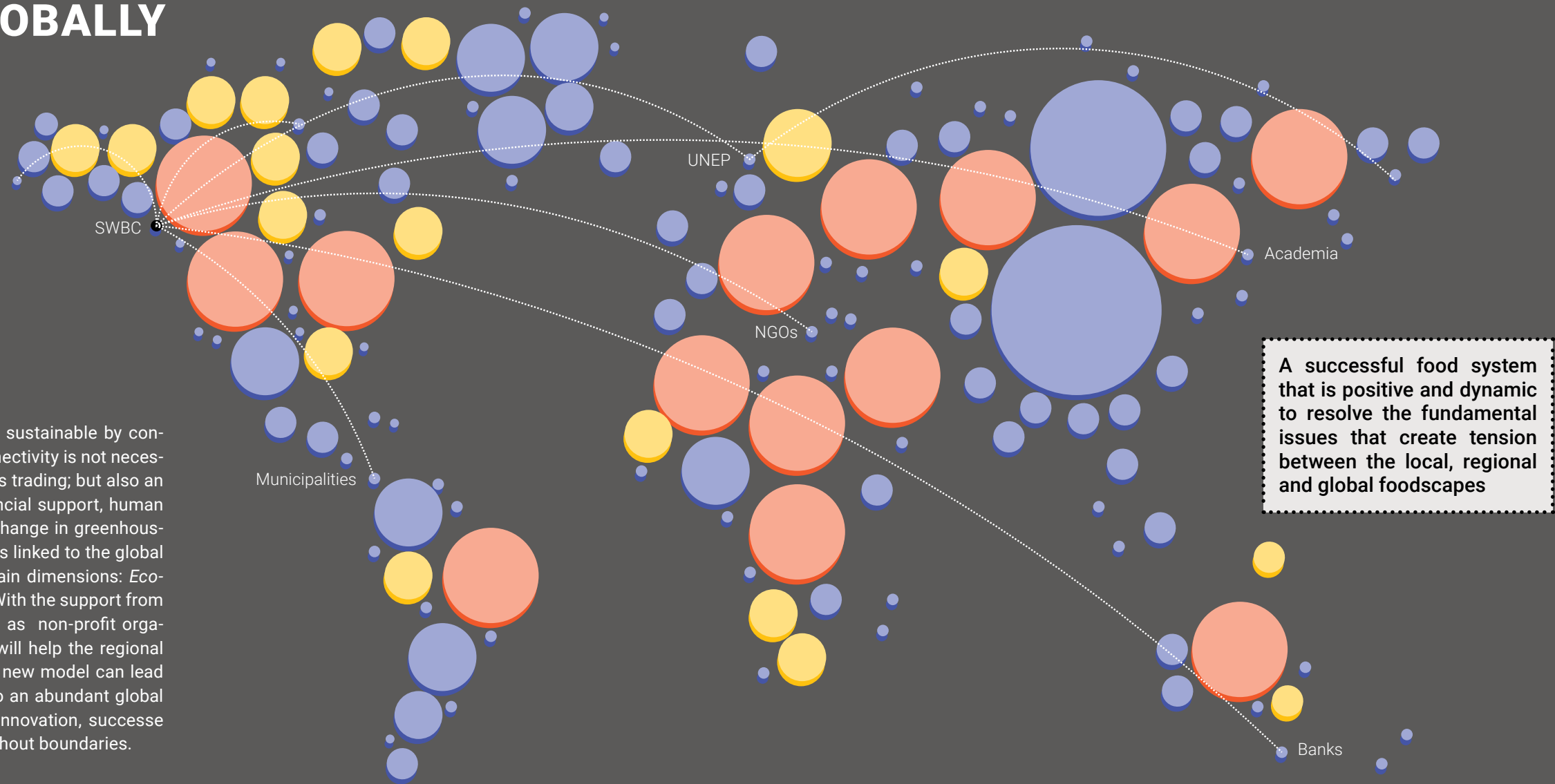
Shared processing facilities can help new producers and lower cost. Storage, a direct marketplace and a community with supportive facilities and resources also play a big role in helping farmers to connect with consumers. All these future developments are fitting into the local foodscape and create new jobs to help sustain the local economy, viable farmlands and an engaged foodscape.





# PROTOTYPE: CONNECT GLOBALLY

South West BC could truly be sustainable by connecting to the world. This connectivity is not necessarily through traditional goods trading; but also an exchange of information, financial support, human resources or even climate exchange in greenhouses. The regional food system is linked to the global food system through three main dimensions: *Economic, Ecological* and *Social*. With the support from governments, industry as well as non-profit organizations, these connections will help the regional food system to be resilient. A new model can lead to new ways of contributing to an abundant global food system through shared innovation, successes and inclusive collaboration without boundaries.



# TESTING: QUANTIFYING SUCCESS ON A MATRIX

Because the resilient links serve the same overall objectives, success can be measured across a universal matrix. By monitoring and collecting data on the following quantifiable measures, we are able to closely observe causal relations and implement

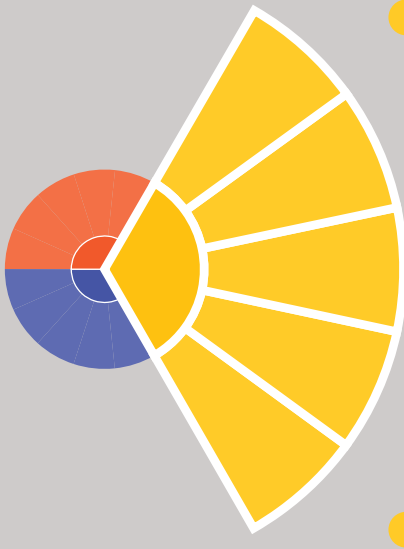
real time adjustments to a functioning new prototype system. Every positive improvement represents incremental steps toward the overall objective of designing a secure and resilient food future.

## Socio-Cultural



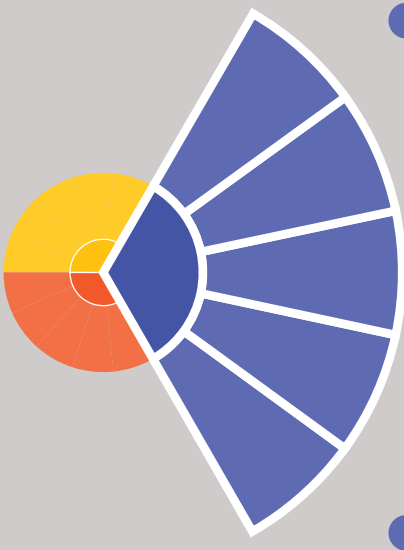
- Number of Related Social Interactions
- Community Satisfaction & Adoption
- Demand for Local Produce, Programs and Resources in Communities
- Connection to Global Community
- Number of Community Stakeholders

## Economic



- Economic Indicators from Agriculture
- Number of New Ag Start-Ups
- Mean Age of Farmers
- Percentage of Local Food in Stores
- New Job Creation through Agriculture

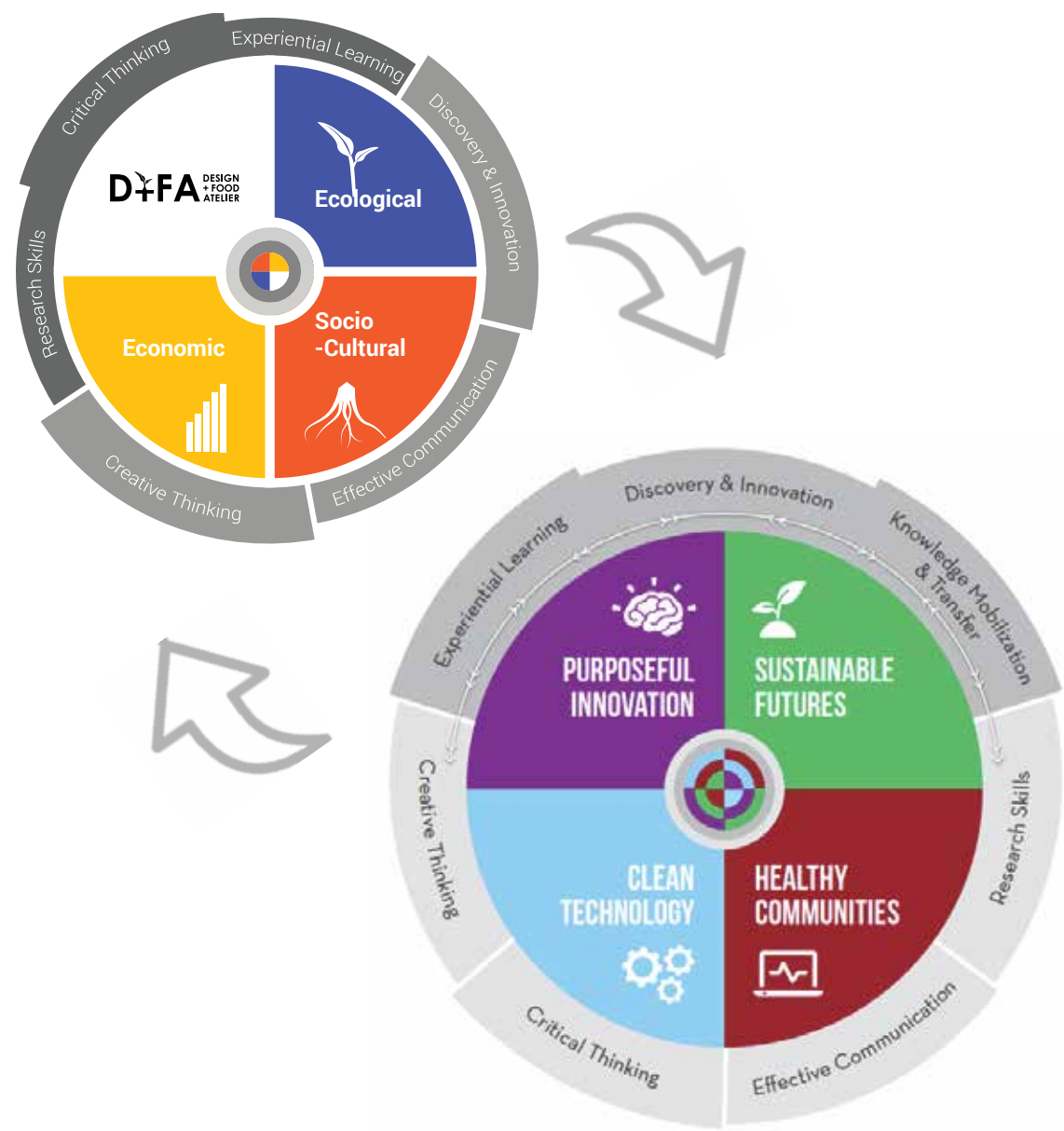
## Ecological



- Availability of Quality Local Foods
- % of Used ALR Lands Used
- # of Clean-Tech Users
- Soil Quality & Carbon Stock
- Carbon Footprint from BC Production

# BUILDING KPU THROUGH APPLIED RESEARCH

## + DESIGN THINKING



## SUMMARY: THE RESILIENT LINK

The current foodscape of Southwest British Columbia (SWBC) is underserving the expectations and needs of its stakeholders. The current trajectory points away from food sovereignty. The growing disconnect between producers and communities further erodes the value of local food sources. Without a major shift in the way we think about food systems, SWBC will be unable to sustain the delicate ecosystem that supports millions of Canadians.

The barriers that separate producers and consumers should be eliminated. Communities and policymakers must find interesting ways to support food systems-based new starts and small-scale producers. Today's predominant agriculture, margin-driven, monocultural agriculture threatens the resilience of the SWBC ecosystem, and separates local people from their food.

After observing existing models in the current food system, in-depth theoretical anal-

ysis, and case study reviews, we are proposing a sustainable new system to align the efforts of the current system.

The Resilient Link outlines an adaptable framework to support the economic, socio-cultural, and ecological changes required to grow a sustainable foodscape in SWBC. This initiative promotes the birth of new local food businesses, supports the struggling farmers, and gives the community access to local diversified produce.

There is no single solution to this complex problem. It could likely take the combined efforts of every willing person disseminating old and new knowledge and putting it into practice. It might take more. Most importantly this dialogue must continue and involve new parties to approach the problem from new perspectives.

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