The Future of Arctic Farming
Greenhouses and hydroponic systems are becoming ripe with possibility.

Traditional Farming & Food Challenges

- **LOGISTICS CHALLENGES IN WINTER**
- **GREENHOUSE GAS EMISSIONS**
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- **HIGH IMPORT COSTS**
- **DEPENDENCY ON OIL**
- **INCREASING HEALTH RELATED ISSUES & OBESITY**
- **INCREASED HEALTH RELATED ISSUES & OBESITY**
- **SHORT GROWING SEASON**
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- **FINANCIAL BURDEN TO FAMILIES**
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**“If we can do this project here, near the North Pole, then it can be done anywhere!”**

Benjamin L. Vidmar, Polar Permaculture Founder

Benefits of Greenhouse & Hydroponic Farming

- **LOWER COSTS**
- **IMPROVED DIET & HEALTH**
- **REDUCTION IN GREENHOUSE GAS EMISSIONS**
- **SHORTER HARVEST-TO-SHELF CYCLES**
- **BETTER QUALITY OF PRODUCE**
- **FOOD SECURITY AND SUPPLY**
- **SUSTAINABLE ORGANIC FARMING METHODS**

Greenhouse & Hydroponic Farming Projects

- **ALASKA Kotzebue**
  - Kikiktagruk Inupiat Corporation delivered their first greens to the supermarkets in 2016. The production is based on a system of portable high-tech hydroponic containers.

- **CANADA Inuvik**
  - The community developed an old hockey arena into a multi-level greenhouse that has been growing vegetables since 1998.

- **NORWAY Longyearbyen**
  - The Polar Permaculture organization, founded in 2015, uses a mini-geodesic dome which combines permaculture with ecological design to create a resource efficient circular economy.

**Solution**

**GREENHOUSES**

**HYDROPONICS**

- **FOOD SECURITY AND SUPPLY**
- **SHORTEST HARVEST-TO-SHELF CYCLES**
- **EXPECTED LOWER COSTS**
- **BETTER QUALITY OF PRODUCE**
- **REDUCTION IN GREENHOUSE GAS EMISSIONS**
- **SUSTAINABLE ORGANIC FARMING METHODS**

**Greenhouse & Hydroponic Farming Projects**

- **Food imports to Alaska**
  - 1959: 56% imports
  - 2019: 4% imports

- **Produce shipped from mainland Norway to Svalbard**
  - 2019: 100%
  - 2021: 90%
  - 2030: 50%

**Goal**

- **80% local production by 2030**

**Canada’s land area suitable for farming**

- **7%**

**References & Further Information**

Coppes, Mieke (2019): Canada has released its first ever National Food Policy and it has specific impacts for the Canadian North. High North News.

**Credits**

- Arctic farming research by Doris Friedrich
- Infographic design created by Metamorphik Design - www.metamorphikdesign.com
- Hydroponic vector created by macrovector - www.freepik.com

**The Arctic Institute**

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