



Michele Bruni

*Co-founder &
Technical Director,
Inspira Farms*



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Reducing Food Loss & Improving the Cold Supply Chain Globally From Farm to Fork

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Summary

- Food losses: The dimension of the issue
- Challenges and opportunities
 - energy
 - technology
 - compliance and traceability
 - access to financing
- Cases from clients
 - GETIT
 - Flamingo
 - Twiga



The context

- Growing demand (aggregated)
- Growing urban demand in Africa and Latin America
- Increased trade
- Increased information availability
- Increasing volatility on production markets
- Increasing uncertainty along supply chains
- Extreme weather events reshaping production/sourcing areas
- Unpredictable climate patterns
- Over 60% of the food produced comes from 450 million small scale farms
- Less than 3% of raw material produced in Africa is refrigerated

Food losses: The dimension of the issue

- The world is producing 17% more food than in 1988, but almost 50% never reaches consumers.
- Population to reach 9.1 billion by 2050, meeting growing demand requires 70% increase in food availability.
- 1.3 billion MT of food is lost or wasted each year, ½ of which edible.
- Fruit & vegetables have the highest rates of loss and waste among any food group (40-50% of global quantitative losses).
- FAO suggests doubling the production by 2070
- Absence of cold chain and post-harvest management generates losses, spoilage and rejection that affects the whole supply chain.
- In some supply chains, it is estimated that farmers throw away a third of their harvest due to strict retailer and consumer cosmetic standards.



The food currently lost or wasted in Latin America and Africa only could feed 600 million people

Challenges & Opportunities of Cold Chains in Emerging Markets

- Most cold storage technology available is designed for large scale operations in industrialized countries.
- Emerging markets are enabling the growth of 3PL and cold-storages but facilities are concentrated around urban centers and selected ports close to them.
- Small agribusiness largely lacks third-party logistics (3PL) providers.

Small and Medium agribusinesses in developing countries face 3 major constraints in establishing cold chains:

- technology,
- energy,
- financing,
- compliance and traceability



Technology

Bricks and mortar facilities with direct expansion refrigeration systems remain the principle option for on-farm cold storage, but are difficult to get financed, carry high energy costs, and are immobile. (no 380V, unreliability, depreciation, H&S standard unmet).

Shallow manufacturing industries, especially in mechanics and steel, are often preventing the development of suited solutions.



Energy

- In Africa alone more than 600 million people lack access to reliable, affordable energy. (1~ low Amp 7/24 hours is the standard for the ones having access)
- Those in rural areas are largely dependent upon expensive fossil fuels gen-sets.
- In the face of exorbitant operating costs, many are prevented from increasing production capacity and higher value operations.
- Energy storage and decentralized energy production become fundamental to guarantee outputs.



Compliance & Traceability

- Concern about food safety has increased dramatically in recent years. It's estimated 1 of 10, each year suffer from food-borne diseases resulting from either biological or chemical contamination.
- Despite this, less than 5% of the world's fresh fruit and vegetable producers are food-safe certified
- The adoption of food safety assurance programs such as Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP) and HACCP is growing slowly amongst smallholder farmers.
- Local contractors are unable to access the right materials at an accessible price (PUR panels in Rwanda can cost 6 x EU Avg.) and to respect technical norms
- Lack of training standards, capacities and shared norms makes the support to cold chain operations difficult in non standardized equipment.
- Unstructured and fragmented supply chains makes it hard to trace batches, references, etc.



Access to Finance

- Investment in agriculture is needed as the demand for high quality food will increase by 70% by 2050, and that meeting that demand will require at least \$200 billion annually in investments.
- Small-scale agribusinesses in developing countries lack access to reasonable financing options for working capital and for acquiring productive assets.
- Food-and-agribusiness companies on average have demonstrated higher total returns to shareholders (TRS) than many other sectors.
- Traditional construction methods have a high financial depreciation and are difficult to finance in rural areas.
- Finance for agribusinesses needs to dispel misplaced perceptions of risk and offering alternative options to risk-adverse finance conditions, such high collateral requirements, unaffordable interest rates and rigid repayment terms.
- Asset finance, extended payment terms, leasing among others are new alternative finance products for agribusiness



Case Study 1: Get It (Rwanda)

GET IT

- GET IT works with text-to-order model for food-service distribution. The Kigali food-service distributor needed to increase its cold storage capacity and space for food processing to accommodate increasing volumes and hotel and restaurant clients.
- The Company invested in an InspiraFarms facility that includes 60m² of cold storage and a 45m² produce reception area with docks for direct loading from and onto trucks.
- With the InspiraFarms system ready in June 2017, GET IT became Rwanda's first ISO 22000-certified supplier of fruits and vegetables in July.
- Meeting International Standards for food safety management means the company can take on scale clients and export throughout Africa and the Middle East.



Case Study 2: Flamingo (Guatemala)



- Flamingo Holdings is a European wholesaler that grows, processes, packages, distributes and markets fruits, vegetables, flowers and plants originating from 2,500 smallholders around Africa and Latin America to major supermarkets, processors and markets around the UK.
- Flamingo needed a cold chain solution to connect its Guatemalan export partner, SIESA to suppliers in the country's El Quiché Region, and reduce post-harvest loss. SIESA decided to support ACODIPA, farmer cooperative that had an outstanding track record in production and quality in the last years, making them ready to make a step forward into value addition and processing activities.
- ACODIPA, with the support of SIESA, Flamingos and Agexport invested in a complete InspiraFarms Food Processing Facility that now is allowing them to collect and store production in safe conditions.
- As well, they invested in a InspiraFarms GAP compliance module, that has allowed them to certify 15 hectares (out of 25) with Global GAP.



Case Study 3: Twiga Foods (Kenya)



- Twiga Foods is a Kenyan B2B offering small grocery retailers an innovative cashless mobile ordering solution.
- Demand for high quality produce and added convenience has seen Twiga's popularity grow amongst Kenya's grocery retailers. The Company's growth necessitated an expansion plan including larger cold storage facilities with climate control capabilities.
- With a regional office in Nairobi InspiraFarms brought an inside understanding of the regional supply chain and unique challenges of the area's produce vendors. After analysis of volume turnover and growth capacity, InspiraFarms provided a plan to replace Twiga's current reefers with energy efficient banana ripening chambers with remote monitoring capabilities.
- Twiga's increased storage capacity has helped to diversify its business and source produce from more small holders further afield, making next-day delivery on high-quality fully traceable stock available to a growing number of independent vendors.





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