Global challenge to end hunger

What has been achieved by Tilburg University and our strategic partners

Plan to fast-track, scale up, innovate, share, collaborate, co-create and deliver global impact to end hunger

How to get involved and co-create to end hunger?

Contact
Hunger is on the rise according to Food and Agriculture Organization of the United Nations

For the third year in a row, there has been a rise in world hunger. The absolute number of undernourished people, i.e. those facing chronic food deprivation, has **increased to nearly 821 million in 2017, from around 804 million in 2016.** These are levels from almost a decade ago.
The clock is ticking

Every 3.6 seconds someone dies of hunger

#HUNGERPALAYA

http://www.worldometers.info/nl/
Hunger is one of the 17 global UN SDG’s
2.1 By 2030, safe, nutritious and sufficient food

2.2 By 2030, end malnutrition

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers

2.4 By 2030, ensure sustainable food production

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species
Changing context in Relief, Rehabilitation and Development - Geopolitical Instability 1/4
Changing context in Relief, Rehabilitation and Development – Demographic Shift 2/4
Changing context in Relief, Rehabilitation and Development – Exponential Game Changer 3/4
Changing context in Relief, Rehabilitation and Development – Sector Disruptors 4/4
Typologies for humanitarian aid (Source DRA-Strategy 2018-2021)

High Intensity Conflict
- Yemen, Iraq and Syria
- Response relies largely on international actors
- Local partners crucial in negotiating and maintaining access
- Humanitarian principles of crucial importance

Socio-natural Disasters
- Nepal and Sulawesi
- More locally and government led responses
- Increasing attention to Disaster Risk Reduction integrated to development programming
- Increasing use of insurance instruments and shock responsive social protection

Refugee Care
- Jordan, Greece and Turkey
- Increasingly refugees outside of camp settings
- Government led responses and host governments set parameters for inclusion and exclusion of aid recipients
- Challenges for humanitarian space and upholding refugee conventions

Fragile Settings
- South Sudan and Somalia
- Continued emphasis on institution and state building approaches
- Growing engagement of development actors and development and humanitarian links
- Continued high risks and vulnerabilities, often leading to intractable problems

Picture: WFP Warehouse in Hodeida bombed workers trying to save food.
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In 1960 President Dwight Eisenhower proposes to UN General Assembly that "a workable scheme should be devised for providing food aid through the UN system." A year later, FAO and the UN General Assembly approve parallel resolutions that establish the World Food Programme on a three-year experimental basis.

In 1965 UN General Assembly establishes WFP on a continuing basis "for as long as multilateral food is found feasible and desirable".

In 2002 TNT and WFP start a groundbreaking public-private partnership. TNT invests Euro 50 Million to fight hunger with a multiplier for beneficiaries of 1:10. Hein Fleuren has boosted the partnership through innovative operations research solutions. Perry Heijne led TNT’s CSR agenda incl. WFP partnership.

Today WFP feeds 100 Million beneficiaries, ships 4 million metric tons each year and is the largest aid organisation in the world. The optimisation solutions of the University of Tilburg are important for WFP in their mission to end hunger. …but hunger is still on the rise! (source: FAO & WFP)
Supply Chain Optimisation - basic approach
This is how we help…

**MINIMIZE SUPPLY CHAIN COSTS**

- **Procurement prices** for all kinds of commodities at all possible places where we can buy substantial amounts
- **Transportation costs** for all possible connections and various modes of transport for all kinds of commodities
- **Handling/storage costs** at all possible locations in the supply chain

\[
\min_F \sum_{i \in N_s, j, k} p_{c_{ik}} \cdot F_{ijk} + \sum_{i, j, k} t_{c_{ijk}} \cdot F_{ijk} + \sum_{i, j, k} h_{c_j} \cdot F_{ijk}
\]

Such that:

\[
\sum_i F_{ijk} = \sum_i F_{jik}, \ \forall j \in N_p \cup N_w, \ \forall k \in K
\]

\[
\sum_i F_{ijk} = dem_j \cdot rat_k, \ \forall j \in N_B, \ \forall k \in K
\]

\[
F_{ijk} \geq 0, \ \forall i \in N, j \in N, k \in K
\]
Supply Chain Optimised [Optimus]

Major innovations are:
- End to end supply chain optimisation
- Food basket/beneficiary driven <> UN/Government driven
- Modalities for local food supply and cash are real alternatives
…and the results are far above expectations

- For Syria we could show that we can supply food-baskets with the same nutritional value but at 78% of the cost. Therefore, with the same budget, we could feed nearly 1 Million people more!

- All the big operations at WFP (Yemen, Iraq, Libya, Sahel and Syria) are now planned with Optimus. We find improvements of 15-20% which means an enormous impact on the amount of beneficiaries that can be fed.

- In period 2018-2020 eighty WFP local teams will implement Optimus as a strategic and tactical solution. Koen Peters* and his expert team will train and support the local teams.

(*) Alumnus UvT – Ph.D. Supply Chain Expert WFP
… thanks to Optimus more complexity and parameters can be considered when designing WFP’s programmes and operations!

- Beneficiaries prefer beans over lentils, should we adjust our food basket?
- WFP will be receiving 70% of the funds needed, how can we maximize outcomes?
- Local markets are functioning, should we favor cash transfers to beneficiaries?
- Prices for rice have gone down recently, from which sources should we purchase?
- We are already buying from smallholder farmers, should we scale-up?
- During rainy season we are unable to move food, how should we preposition?

**OPTIMUS supports in answering these questions**
… and we won the Award for BEST HUMANITARIAN INNOVATION!

Koen Peters and Hein Fleuren receive award at PARTOS INNOVATION FESTIVAL
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Optimus; further improvements in 3 areas...

**Enhancements:**
- Improve nutrition measures and food baskets
- Include (carbon) footprint
- More emphasis on local and regional agro and logistics
- Combine with non-food requirements

**Dealing with uncertainty in:**
- Demand and Supply
- Access (infrastructure/safety & security)
- Prizes of commodities
- Funding and Finance

**Scale up and down:**
- Multiple countries and regions
- Finer granularity from monthly to weekly planning
ZHL objectives 2019 - 2023

- Further improve and sustain Optimus solution together with the WFP team.
- Apply Optimus beyond high intensity conflicts (refer to slide 8) e.g. refugee care. But also from relief to rehabilitation and development.
- Co create solutions to deliver SDG2-impact for 835 million people together with strategic partners
- Train and support WFP and other Aid/Development organisations that want deliver SDG2-impact
- Enable local partners and beneficiaries to implement successful and sustainable SDG2-solutions
Partnerships key for ZHL success

**CURRENT PARTNERS**
- WFP (World Food Programme)
- Tilburg University
- Dutch Coalition for Humanitarian Innovation
- Blue Rock Logistics
- Food and Agriculture Organization of the United Nations

**POTENTIAL PARTNERS**
- Ministerie van Buitenlandse Zaken
Content presentation

- Global challenge to end hunger

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ZHL presents excellent fit with policy MoFa

Goed voor de wereld, goed voor Nederland

- Een preventie-agenda gericht op het voorkomen van conflict, armoede, migratie, ongelijkheid en klimaatverandering.
- Een proactieve handels- en investeringsagenda voor internationaal ondernemend Nederland.
- Versterking van de positie van vrouwen en meisjes.
- Perspectief bieden: meer investeren in vrouwen, onderwijs, werk en de jeugd.
- Promoten van innovatieve manieren van werken.
- Benutten van kansen die digitalisering biedt voor duurzame en inclusieve groei.
- Bouwen op de kracht, kennis en meerwaarde van Nederland.
- Nieuwe samenwerking met overheden, maatschappelijk middenveld, bedrijven en kennisinstellingen.

Investeren in perspectief
Beleidsnota buitenlandse handel en ontwikkelingssamenwerking

- De focus van ontwikkelingssamenwerking verschuift naar de instabiele regio's West-Afrika/Sahel, de Hoorn van Afrika, het Midden-Oosten en Noord-Afrika, voor de aanpak van grond- en voedselzaken van armoede, migratie, terreur en klimaatverandering.
- Jaarlijks 60 miljoen euro extra voor nieuwe investeringen in onderwijs, werk, jeugd en vrouwen.
- Jaarlijks 200 miljoen euro extra voor noodhulp, opvang van vluchtelingen in de regio's van herkomst.

Duurzame, inclusieve groei & klimaatactie

- Sterk internationaal verdienvermogen Nederland
- Gendergelijkheid

Voorkomen van conflict & verminderen van armoede

- Optimalisering dienstverlening aan mkb en startups door oprichting NL International Business, Trade & Innovatie NL en Invest-NL.
- Meer nadruk op kennisdiplomatie en internationale samenwerking, ook voor de SDG's in de economische diplomatie.
- Publiek private samenwerking voor internationaliserings-strategie en branding.

Analyse & tendensen

- Welvaart en veiligheid in Nederland zijn nauw verbonden met de wereld om ons heen. In veel opzichten gaat het steeds beter: minder extreme armoede, economische groei in veel ontwikkelingslanden, betere toegang tot basisonderwijs zoals schoon water, gezondheidszorg en onderwijs. Ook de Nederlandse economie staat er goed voor. Nederland is een groot handelsland en één van de meest innovatieve en concurrerende landen ter wereld.
- Tegelijkertijd zijn er grote veranderingen en serieuze uitdagingen: meer conflicten en instabiliteit, grote vluchtelingen- en migratiestromen, die resterende extreme armoede, hoge bevolkingsgroei in sommige regio's, klimaatverandering, ongelijke verdeelde kansen, snelle technologische ontwikkelingen en digitalisering, opkomend protektionisme, scherpe internationale concurrentie.
What do we need to deliver ZHL impact?

- Funding or social investments; Euro 1.2 million for period 2019 – 2023.

- Strategic Partners to fast-track, scale up, innovate, share, collaborate, co-create and deliver global impact to end hunger.

- Projects, programs and assignments to test, apply and deploy Optimus/ZHL solutions and tool.

- Local governments, partners and beneficiaries to co-create and implement successful and sustainable local SDG2-solutions
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Contact – Zero Hunger Lab

Hein Fleuren
Co-Founder: Zero Hunger Lab | Science with a Soul Impact program | Tilburg University
M: +31 651077148
E: fleuren@uvt.nl

Perry Heijne
Co-Founder: Zero Hunger Lab | Science with a Soul Impact program | Tilburg University
M: +31 653438257
E: perry.heijne@xs4all.nl