

Edema-Steernberg Foundation

Progress Report

01 | 2016 – 07 | 2018



Edema-
Steernberg
Foundation



WAGENINGEN
UNIVERSITY & RESEARCH

Preface

“Why we eat what we eat, is a question being asked with increasing frequency. Obesity, diabetes and other lifestyle-related diseases are rising, especially among low-socioeconomic populations (SEP). Intervention strategies are needed that help people make healthy choices. This will require a much richer understanding of the complex interplay between the many factors – social, psychological, cultural, physical and economical – involved in human eating behaviour, than we currently have.

This is precisely the focus of the activities of the Edema-Steernberg Foundation. It is the first initiative in the Netherlands that directly connects nutrition and the social sciences; an initiative made possible by the support of Johanna Edema, MSc (1923-2015), who left €2 million, in her will, to research why we eat what eat. Her legacy has enabled four MSc students to study at Wageningen University & Research, five comprehensive research projects and the hiring of six PhDs to fulfil her wishes.

As Board we have secured ourselves from advice from three scientists with profound knowledge of various aspects of the research covered by the foundation. Members of this Advisory Board are:
Mrs. Professor Lotte Holm, University of Copenhagen
Mrs. Professor (emeritus) Leontien Visser, Wageningen University & Research
Dr. Roel Hermans, Netherlands Nutrition Center.

With the PhD projects nearly halfway complete, each PhD fellow intimately knows his or her milestones and successes, and his or her challenges; in the recruitment of volunteers, for example, or in getting their research proposal approved by the Medical Ethical Committee. In this ‘mid-term report’ they are sharing their personal experiences with you.

As one of the ‘founding fathers’ of the Edema-Steernberg Foundation I find it wonderful to see these talented and enthusiastic scientists, together with their supervisors, achieving their goals and bringing this niche area of research to life.

We believe their work sows the seeds of a new, multidisciplinary research network in which fundamental and the applied (social) sciences go hand in hand. By understanding why people eat what they eat, we will develop truly effective intervention strategies and tools to hinder the spread of lifestyle-related diseases.”

Frans Kok, emeritus professor Nutrition and health,
Wageningen University & Research and chair of the Board of the
Edema-Steernberg Foundation



From left to right: Johan Bouma, Frans Kok, Fré Pepping
(Board Edema-Steernberg Foundation).

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Introduction

The Edema-Steernberg foundation: continuing her life's work

Why we eat what we eat, intrigued Wageningen-based scientist and academic teacher Johanna Edema (1923-2015) throughout her career. She established the Edema-Steernberg Foundation to continue searching for the answers after her death.

“Why do nutritionists use the word fat when they talk about all chemical substances that are listed as ‘fats’ while in the normal day-to-day language people use fat for visible fats (bacon fat, lard, grease in contrast to butter, margarine and vegetable oil)”, was Edema’s agitated response when she overheard colleagues at the Human Nutrition Department of the former Agriculture College talking with each other. She worked there from 1968 to 1987 when she retired.

Ahead of her time

Edema, from Groningen and educated as a geographer, was a strong personality with a clear opinion about the direction research and education should take. Nutrition scientists at that time worked predominantly from a natural sciences perspective, focusing on dietary assessment and the health effects of nutrients. Edema, however, kept saying that investigating the mechanisms behind eating behaviour was just as important in order to improve people’s health. She was ahead of her time: prevention of lifestyle diseases has become a key focus over the last twenty years. In her lectures she highlighted the socio-scientific data around eating and tried to establish research activities in this field. An overview of her thoughts, ideas and papers can be found in the publication *Eetgewoontes als cultuurverschijnsel* (Eating habits as a cultural phenomenon, 2015).

Autumn 2015, Edema realized a longstanding wish; she established a foundation to enhance “research and knowledge exchange in the field of household sociology with special attention to nutrition patterns”. In short, how does individual freedom of choice influence what we eat? Which social, economic, cultural, religious, moral and ethical factors affect consumption patterns within families? She left her full legacy to the initiative, named after her parents: Siert Edema and Dieverdina Steernberg.



Kick-off meeting on 11 May 2017.

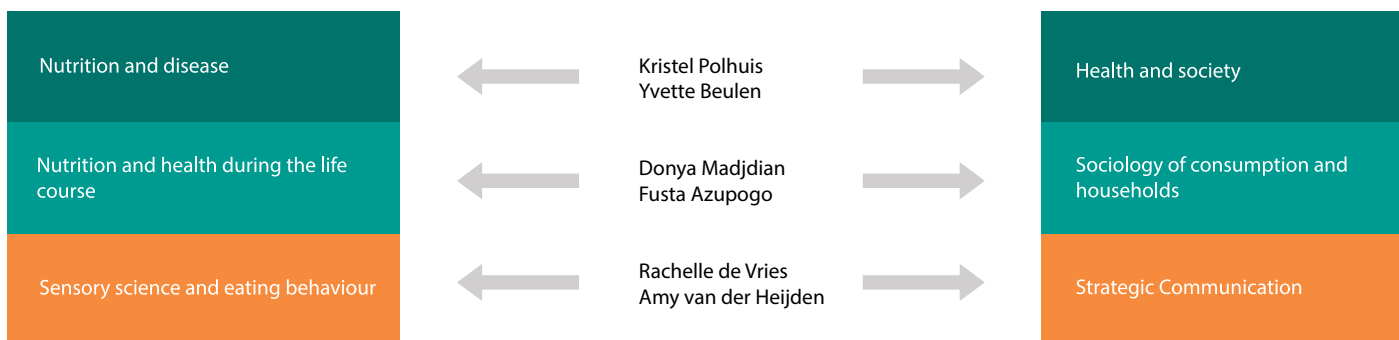


Figure 1: Three Nutrition chair groups (left column) and three Social Sciences chair groups (right column) joint supervise six PhD fellows (middle column).

Follow-up of her work through the foundation

In January 2016 the foundation became operational. The Board of the initiative decided to fund 4 MSc scholarships for female students originating from low- and middle-income countries; two of them started in September 2016, and two in the year after.

In addition, a call text was published to invite scientists from human nutrition and social sciences to propose PhD projects on the theme 'Why do people eat what they eat? After a pre-selection, seven consortia – each of them consisting of nutritionists and social scientists – were invited to prepare a full research proposal. Ultimately, five research projects were awarded funding. They are carried out by six PhD fellows (2017-2021). By the end of 2018 or early 2019 a post-doc will be employed to integrate the results of the different projects and initiate follow-up research.



From left to right: Rachelle de Vries, Yvette Beulen, Donya Madjdian, Kristel Polhuis, Fusta Azupogo and Amy van der Heijden.

“We should talk more with people”

“Health is unevenly distributed across socioeconomic position. Those of lower income, education and/or occupation experience worse health and die earlier than those of high income or education. In the Netherlands, men with the lowest education, for example, live on average seven years less than those with the highest education. Unfavourable health conditions accumulate in individuals with of low socio-economic position, and current preventive strategies are often less effective in these populations, making their risk for developing health-related issues disproportionately high. Therefore, we need preventive strategies that effectively support positive health-related behaviours among those that might benefit most.

Personal values

Working as a researcher within the domain of health promotion, I believe it is important to reflect on how your personal values, beliefs - and prejudices - about health in general, and the health behaviours of those of low socio-economic position in particular might affect your work. If you want to understand why people eat what they eat, which is one of the fundamental drivers of the Edema-Steernberg Foundation, then it is crucial that we (researchers) better listen to people's stories and use this as a starting point for our work.

I do not yet know 'the key' to effectively engaging individuals with low socio-economic position in health-related interventions. Yet, I believe that we first need to ask ourselves more often whether we are doing the right things ourselves to engage our target group in interventions. Instead of talking about people's health behaviours, for example, we could also invest more in talking with people about their health-behaviours. What are the barriers they face? What are their ideas about a healthy lifestyle? What do they think they need to eat (more) healthily?

Knowing your target group

Therefore, I am delighted to see that those PhD students, whose work is funded by the Edema-Steernberg Foundation, are all investing in precisely these questions, and getting to know their target groups via everyday life-story interviews to volunteering for the Food Bank (Voedselbank).”

Dr Roel Hermans, expert in Nutrition and Behaviour at Netherlands Nutrition Centre (Voedingscentrum) and postdoctoral fellow at Radboud University/Maastricht University

| PhD fellow Kristel Polhuis:

“When eating healthily becomes one problem too many”

PhD fellow Kristel Polhuis is investigating the eating behaviour of people from low socioeconomic populations (SEP) who suffer from type 2 diabetes mellitus. She discovered that these people are relatively well-informed about healthy nutrition. “Intervention programs should take into account that stressful life circumstances can make healthy-diet decisions more difficult”, she emphasizes.

Early in her university career Kristel Polhuis became interested in diabetes. “Globally, the disease is still on the increase. Its consequences can be extremely serious, and include blindness, losing an arm or leg and premature death”, she explains. People rarely notice it. “This makes it more difficult to find the motivation to make radical lifestyle changes.”

During her MSc studies in Human Nutrition and Health, Polhuis wrote (as part of a research master track) a research proposal on type 2 diabetes mellitus. Although her proposal did not win her a scholarship, once into her first job after graduation the idea of being a researcher kept running through her mind. “When this PhD project vacancy was published I applied immediately”, she says.

The aim of Polhuis’ research project, which began April 2017, is to develop, implement and evaluate an intervention tool for low-SEP people with type 2 diabetes and support them to eat more healthily. In-depth interviews with practice nurses and people having the disease will give insight into the needs and demands of this target group.

Initially, recruiting interview candidates took more effort than expected, but is now going well. “I have already had nine patient interviews and have ten more planned”, the PhD fellow says, with some relief.

Stressful lives

The interviews have deeply affected Polhuis. “People speak of having had a ‘heavy’ life, citing issues such as being neglected by their parents in childhood, abuse and unemployment”, she illustrates. “They do know how important healthy nutrition is, especially where diabetes is concerned. But their lives ask so much of them that they simply do not have the energy or motivation needed to make radical lifestyle changes. Healthy eating is yet another obstacle that has to be overcome.” This is really an important consideration for future interventions,

stresses Polhuis. “Health professionals tend to focus on biomedical measures (e.g. blood levels) and diet in their consultations. But I believe they should put more focus on the life circumstances and psychological aspects that determine why someone eats what he eats.”

Coaching

The PhD does not yet know what form ‘her’ intervention will take, but one thing is sure: “It will be more than just another diet program. It will include individual or group coaching and, possibly, psychological support for low-SEP diabetes patients in their everyday lives”, she says. “By 2021 we will know whether the new approach (still in the ‘discovery’ phase) works and whether it can be implemented on a large scale.”

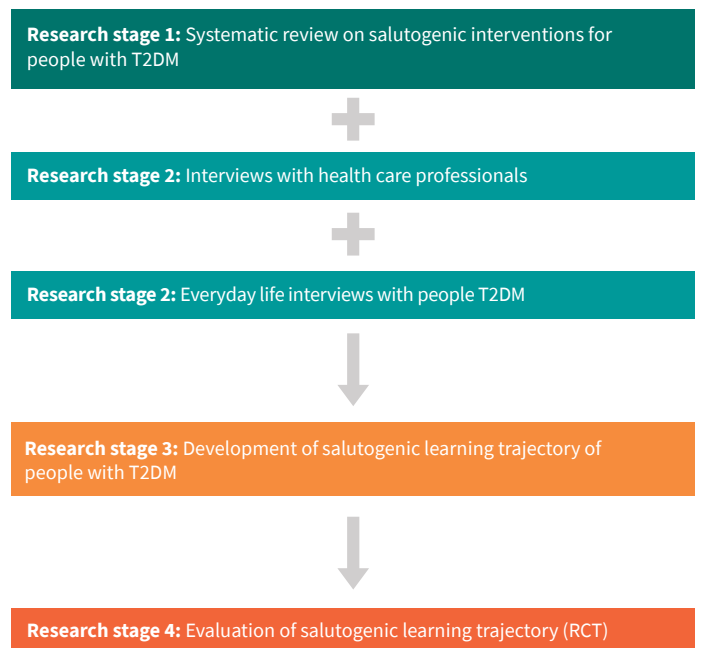


Figure 2: Flow chart showing the respective research stages.

PhD fellow Yvette Beulen:

“Bridging science and practice”

PhD fellow Yvette Beulen is investigating the dietary intake of pregnant women: why they eat what they eat and what midwives can do to improve it. She is planning personal interviews with over 50 women. “It is essential to involve target groups in your research as early as possible”, she stresses. “Only in this way you can develop tools that will be accepted, appreciated and applied.”

Beulen was not necessarily looking for a PhD job after obtaining her Master’s in Nutrition and Health at Wageningen University & Research. “I always regretted seeing researchers working in ivory towers”, she explains. “This project, however,

attracted me with its application-oriented approach; aiming to develop a tool that supports pregnant women from low socioeconomic populations (SEP) to adopt and maintain healthy dietary intake.” Pregnant women from low-socioeconomic populations are at increased risk of developing pregnancy diabetes, and relatively often experience early delivery or bear a child with a low birth weight.

Beulen was also attracted by the multidisciplinary nature of the project. It combines the nutritional and social sciences – a characteristic of all PhD research sponsored by the Edema-Steernberg Foundation.

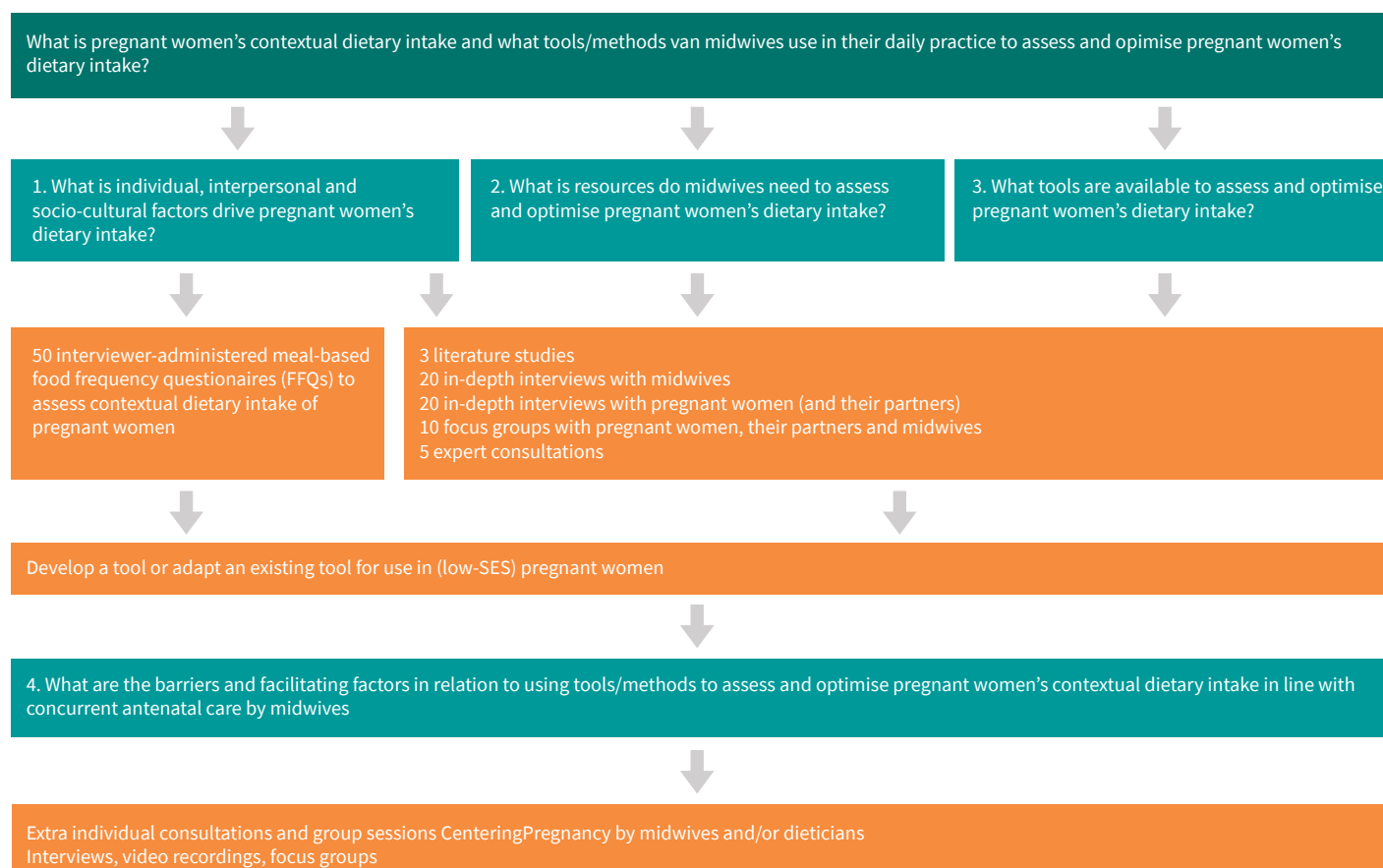


Figure 3: Overview of the various research questions and how these research questions will be addressed.

In March 2017 the nutritionist applied for a PhD job and, little more than a year later, she has collected meal-based food frequency questionnaires from eighteen women. Fourteen of these women and twenty midwives also gave in-depth interviews.

Recruitment of volunteers took more time than Beulen expected. “People wanted to know precisely what’s in it for them before they decided to participate or not”, she explains. The PhD fellow visited midwifery practices and used the technique of ‘snowballing’ to get more women on board. “I asked participants whether they knew other pregnant women who would be interested.” She also adapted her project planning to allow more time for recruitment and interviews. It was worth the effort, as the interviews revealed valuable insights into the nutritional advice given during midwife-consultations. “Pregnant women said they obtained information on a healthy diet via their midwife”, says the PhD fellow. “But, surprisingly, midwives said healthy nutrition has low priority in their consultation visits and that they would like to get dieticians involved.” Beulen also asked the women what would be their ideal picture of nutritional advice. “They said they would like to have information tailor-made for their personal situation and preferences.”

Increasing health awareness

Beulen expects that, by the end of her project in 2021, she will - at least - have increased health awareness among pregnant women from low SEP. “I hope we will have a working tool that midwives will use and that establishes a measurable improvement in dietary intake. Not only during pregnancy but also after delivery.”

Ideally, Beulen would like to include an evaluation of the tool in her project: does it really improve eating habits in the long term, and what are its effects on BMI, prevalence of maternal diabetes and cardiovascular diseases, birth weight and early delivery of the baby. But she accepts that time might be too short: “A good reason to continue the Edema-Steernberg research with follow-up projects after our studies are completed.” *A follow-up project, Empowerment of pregnant women to have a healthier dietary intake, is underway. The project, sponsored by ZonMw, will start in October 2018.*

I PhD fellow Donya Madjdian:

“Teenagers make great data collectors”

Collaboration is central to Donya Madjdian’s PhD project; whether it’s international non-governmental organizations, her ‘twin’ PhD fellow Fusta Azupogo or the boys and girls participating in her study. “It gives me so much energy to work with such highly self-motivated people”, she says.

Once Donya had completed her MSc graduation project, in the Humla district of Nepal, on intra-household food allocation, she knew there was more she had to do. “I wanted to dive deeper into the lifestyle of adolescent boys and girls. Why do they eat what they eat, and what factors influence the choices they make when it comes to school, getting married, starting a family and living healthily”, she explains. “Adolescents are a difficult target group to reach and, in a country like Nepal, almost invisible. Girls, for example, are often seen as future mothers rather than individuals with ambitions and dreams.”

From 24/7 dietary record to focus group discussion

In mid-2017 she began her research, in which she combines qualitative and quantitative approaches (mixed-methods approach) from both nutrition and the social sciences. This combination is essential to understand adolescents’ lives and develop sustainable interventions and programs that work, according to the PhD fellow.

“We are following a panel of adolescent girls in Nepal, collect 24/7 dietary records and assess their height, weight and haemoglobin blood levels, for example, and we are doing in-depth interviews using creative elicitation methods with adolescents, their parents and teachers”, she illustrates. “We get them to tell us about their life history, their (future) dreams and expectations, and use wooden toys to find out who the important people in their lives are – in order to see who influences their aspirations and behaviours. We also organize focus group discussions in which the boys and girls have an active role, by creating timelines of adolescents’ trajectories into adulthood in their communities.”

Madjdian has initiated a collaboration with the non-governmental organization Helen Keller International, which is leading the second phase of the national Suuuhara (Good Nutrition) intervention programme in Nepal. She also has regular consultations with Fusta Azupogo, her PhD fellow/colleague in the Ten2Twenty project. “We run our projects in parallel and, after completing our field work, we hope to compare data between Nepal and his target country, Ghana.”

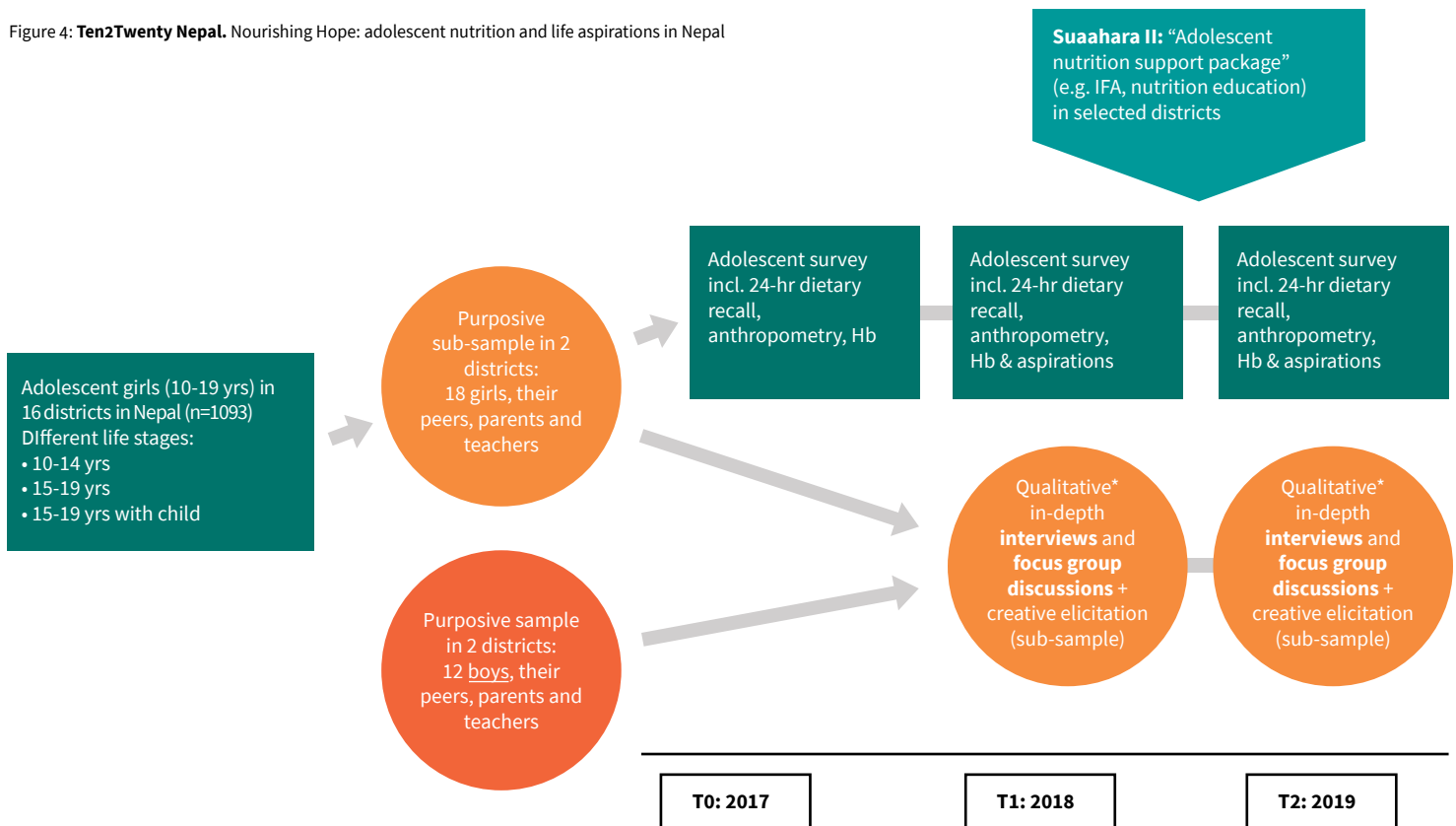
Learning new things

Madjdian is happy with her work as a PhD fellow. “From the very beginning I have been learning new things, from defining the steps to set-up a research project and how to team up/collaborate with organizations and my colleagues to organize the actual fieldwork”, she says. Though the local circumstances are challenging - with logistical issues, telephone and internet connections going down very often and extreme weather circumstances during monsoon data collection - the fieldwork fills her with energy. “I feel inspired by the people I am working with, their enthusiasm, openness and their unique life stories”, she says. “It is also rewarding to see that plans I figured out behind my desk in Wageningen

actually work out in practice.” The PhD fellow is also proud of the scientific paper she published, together with Fusta Azupogo, for the New York Academy of Sciences, see the textbox on page ten. Ten2Twenty: adolescent nutrition.

Madjdian is confident that by 2021 she will have her research questions answered. “I hope the insights from my work will be implemented by organizations involved in improving adolescent nutrition and their lives”, she says. “I also hope to inspire other scientists into using new research approaches, such as actively involving adolescents in data collection.”

Figure 4: **Ten2Twenty Nepal**. Nourishing Hope: adolescent nutrition and life aspirations in Nepal



* To understand health and nutrition behavior, aspirations and important others’ influence on adolescents’ (aspired) life trajectory and behaviour.

Ten2Twenty: adolescent nutrition

The Ten2Twenty research programme (2016-2020), initiated and coordinated by Wageningen University & Research, aims to examine the interrelations, synergies and trade-offs between context-specific nutritional, social and economic approaches to optimizing the nutrition of Filipino, Nepali, Mexican and Ghanaian adolescent girls to improve health, family formation, education and labour participation.

Adolescence, with its rapid growth and maturation, provides a unique window of opportunity to address the nutritional problems that are highly prevalent among female adolescents in low- and middle-income countries, particularly in South Asia, Latin America and Sub-Saharan Africa. However, currently, most nutrition interventions are focussed around the first 1,000 days of a child's life, leaving adolescents, and especially girls, behind.

Madjdian, D. S., Azupogo, F., Osendarp, S., Bras, H., & Brouwer, I. (2018). Socio-cultural and economic determinants and consequences of adolescent undernutrition and micronutrient deficiencies in LLMICs: a systematic narrative review. *Ann. N.Y. Acad. Sci.*, 1416, 117–139. <https://doi.org/10.1111/nyas.13670>

Fusta Azupogo, Elisabetta Aurino, Aulo Gelli, Kwabena M. Bosompem, Irene Ayi, Saskia J.M. Osendarp, Inge D. Brouwer, Gloria Folson (2018). Agro-ecological zone and farm diversity are factors associated with haemoglobin and anaemia among rural school-aged children and adolescents in Ghana. *Maternal and Child Nutrition* <https://doi.org/10.1111/mcn.12643>

PhD fellow Fusta Azupogo:

“I want boys and girls to enjoy healthy diets”

An innovative design for a two-year follow-up study with an embedded randomised controlled trial (RCT) in Ghana, a successful pilot study and two scientific publications: Fusta Azupogo has been busy over the last two years. He is a PhD fellow in the Ten2Twenty-project, investigating the relationships between nutrition and social and economic trajectories during adolescence among girls in Ghana.

Accepting this PhD job in Wageningen, was a dream come true for Azupogo, born and raised in a low-socioeconomic family in Ghana. “As a child, nutrition was always an issue: never enough food, and when there was some it was little more than a bowl of maize with, perhaps, some vegetable.” His undergraduate studies, at Ghana’s Tamale University for Development Studies, made Fusta more enthused about linking nutrition with health and life outcomes. In his MSc Thesis, while at Wageningen UR, he developed food-based guidelines for rural children in the Karaga District of Ghana. “I realized that effective policy is based on reliable research about nutrition, eating habits and socio-economic determinants. I decided, right then, that this would be my career focus in order to help vulnerable population groups.”

Today, malnutrition remains widespread in Ghana, especially among girls. “Girls eat less healthily than boys, and are disadvantaged in intra-household food distribution”, Azupogo explains. In general, Ghanaian women are less educated than men, and girls drop out of secondary school more often than boys. “Data on

age and gender-specific health, nutrition and education status and insights into the interactions between nutrition and socio-economic factors are, however, lacking.”

Fortified biscuits

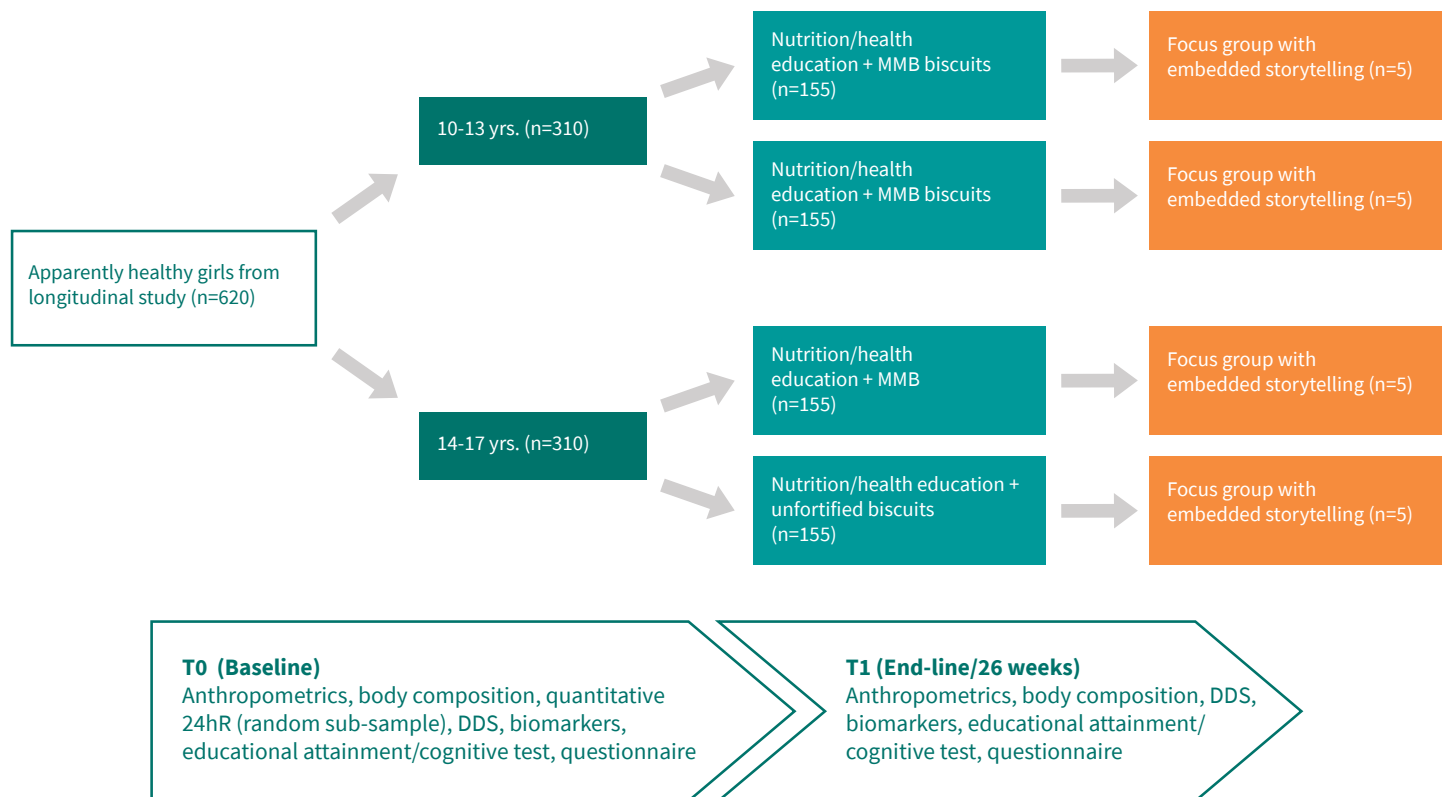
The PhD project Azupogo began May-2017 aims to collect this data, through an extensive two-year follow-up study among 1120 adolescent girls living in the North of Ghana. “The study includes a six month-trial in which adolescent girls are randomly assigned to receive nutrition and health education with multiple micronutrient (vitamins and minerals) fortified biscuits, or unfortified biscuits, for five days each week”, he says. Assessments will focus on micronutrient status and growth, plus some secondary outcomes including self-esteem and life satisfaction. In the two-year follow-up study, data will be collected at baseline, 12 and 24 months on nutrition and socio-economic metrics such as occupation, pubertal development, quality of life, self-esteem, cognitive skills and academic performance. In November 2017, Azupogo carried out a pilot study to optimize the questionnaire he has developed for data capture. He is supported by the Sight and Life foundation, who provide the biscuits via a local manufacturer. He has published his first academic papers, on the social, cultural and economic determinants and consequences of malnutrition among adolescents (New York Academy of Sciences), farming, agro-ecological zone, farm diversity and risk of anaemia among rural school children and adolescents in Ghana (Journal of Maternal and Child Nutrition).

Stakeholders

One of the major challenges in the project is communicating effectively with potential stakeholders, says Azupogo. “For example, in our pilot survey, we missed the crucial fact that not only the education directorate and school heads need to be involved but also the circuit supervisors who monitor teaching and learning in schools.” However, Azupogo sees the biggest challenge in his next step: combining social and life sciences in his research. His training in human nutrition has exposed him more to quantitative than qualitative research.

Azupogo will begin his follow-up study in late 2018. “I am convinced links exist between effective nutrition and psychosocial factors such as quality of life, cognitive skills, self-esteem and work. I hope to make a real contribution to solving some of our global nutritional problems.”

Figure 5: Design of a 26-week double-blind, randomised placebo-controlled trial (RCT) among adolescent girls in Ghana; MMB= multiple-micronutrient fortified biscuits, study overview.



PhD fellow Rachelle de Vries:

“We need a broader perspective on eating behaviour”

PhD fellow Rachelle de Vries visited the Lowlands Festival this summer, but not to listen to bands. “We tested the ability of hundreds of people to remember and localise different foods and food odours”, she says. The study will deliver valuable insights into the food spatial memory biases people may have inherited from their hunter-gatherer ancestors.

“What we know as modern society occupies less than one per cent of human history”, explains De Vries. “To better understand why we tend to behave in certain ways we must look at environmental conditioning during at least 90% of human evolution.” For instance, periods of food shortage were common in the past, whereas today we live with an abundance of especially high-calorie foods. “So there might be a disconnection between how our minds and bodies have adapted over millennia and our current food environment, resulting in undesirable eating behaviours.”

Comfort zone

This is the context of De Vries’ PhD project: investigating the spatial memory biases people may have inherited from their hunter-gatherer ancestors and how to reduce the adverse effects of such biases on eating behaviour. A novel and complex topic, but this PhD fellow loves complexity. “Investigating why we eat what we eat requires both quantitative and qualitative research and multiple disciplines”, she explains. “This forces me out of my comfort zone and makes me grow as a scientist and an individual.”

The research is also in line with de Vries’ multidisciplinary background: she obtained a BSc from University College Utrecht, with a major in Biochemistry and minor in Psychology, followed by an MSc in Nutrition and Health at Wageningen University & Research.

Better spatial memory

Since the start of her PhD, in March 2017, De Vries has completed three studies. “The first one confirmed that biases in spatial memory do exist”, she says. Eighty-eight volunteers were shown standardised images of foods from four different categories: high calorie-sweet, high calorie-savoury, low calorie-sweet, and low calorie-savoury. Together with the images a map was presented, showing the locations of the stalls where the foods were sold. “People remembered the locations of high-calorie foods and savoury-tasting foods significantly better than those of the other food groups.” In the latest study, De Vries investigated spatial memory biases using foods and food odour cues, within a more realistic navigation setting, this time via hundreds of visitors to the Lowlands Festival in August 2018; analysis of the data continues. “It was really beneficial - and fun - to be there with a selection of other researchers.”

The PhD fellow hopes that, within a few years, she will know what biases in spatial memory people inherited from their ancestors and how they influence modern dietary intake. “This will provide leads for the development of behaviour change strategies that promote healthier eating”, she says. Probably even more questions will arise. “There is still so much to discover. I hope my work will help stimulate future developments in this field.”

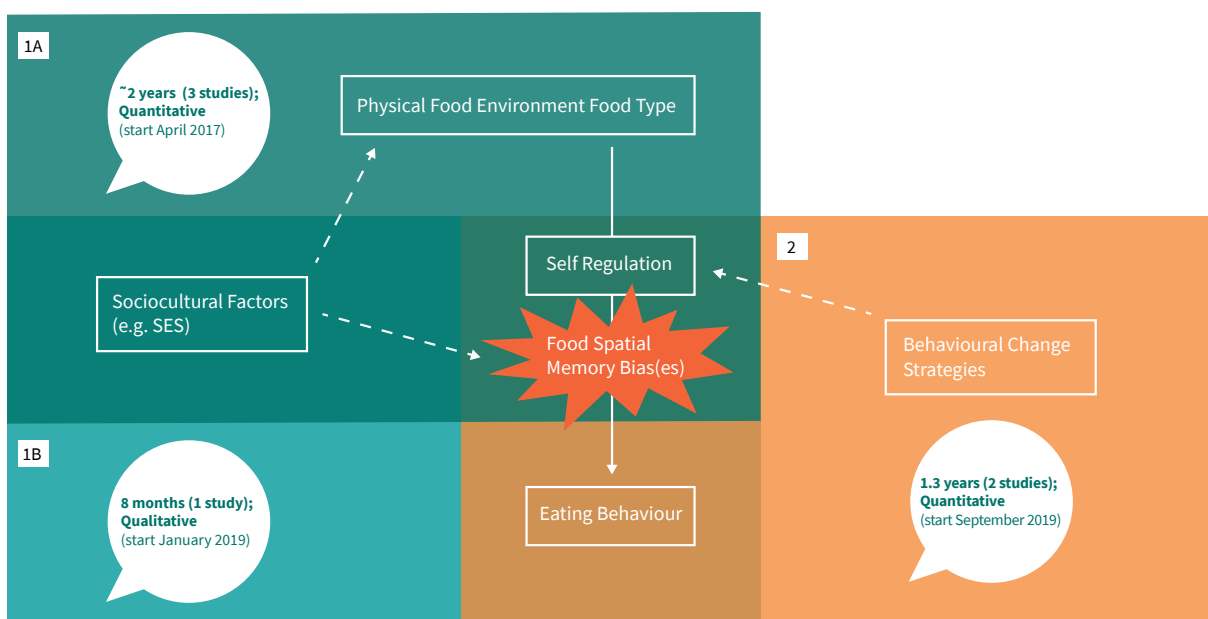


Figure 6: Schematic overview of the various components of the project.

PhD fellow Amy van der Heijden:

“Connecting with my target group is the major challenge in my research project”

Developing an intervention to help parents from lower socioeconomic populations (SEP) talk with their children about healthy nutrition, is the aim of Amy van der Heijden’s PhD research. In order to recruit participants and collect data, she visits families in their homes – in four cities in the Netherlands. “Organizing this is my biggest task”, she smiles.

People from a lower SEP are currently under-represented in nutritional-research data. That’s why, in June 2017, a research proposal became ‘her’ PhD project. “We need insight into the thoughts and habits in this group: effective interventions will need a better understanding of their beliefs and lifestyles”, explains van der Heijden.

Association test

Van der Heijden investigates how low-SEP primary school children and their parents negotiate around diet. “What do they associate with healthy/not healthy, tasty/not tasty and how do these associations arise, and affect mealtime interactions?”, she explains. Based on the insights gained the PhD fellow will develop an intervention that helps parents discuss food choices with their children. During the past year Van der Heijden has done her literature research, piloted an implicit association test for children and their parents, recruited participants in four cities - Ede, Arnhem, Utrecht and Rotterdam - and gained Medical Ethical Commission approval for two planned studies.

Personal approach

Surprisingly the logistics required much more time and creativity than expected. “I am volunteering at the Arnhem food bank in order to meet low SEP people and invite them to participate to the study”, the PhD fellow illustrates. “A personal approach, showing sincere interest in people, works far better than posting flyers and hoping for responses.” Van der Heijden was also quite creative in finding help: a charity organisation in Rotterdam, and lifestyle coaches in Ede and Utrecht have all contributed.

Once Van der Heijden has families ‘on board’ she visits at their homes, at least once. “I interview each family, asking them what they usually eat”, she explains. “Between twelve and twenty families will send us video reports about how their evening meals go. Those families will see me more often.” The PhD fellow is currently busy with how to arrange so many visits in so many locations. “I’ll probably do it city by city.”

Another difficult issue for Van der Heijden is determining that a family comes from a low SEP. “The scientific literature uses multiple indicators, from education and household income to occupation and the socio-economic rating of their

neighbourhood”, she explains. “Should I go for one or multiple indicators? And if different indicators are used in different studies, how can researchers compare studies?”

Targeted intervention

Van der Heijden is convinced she will solve all the issues - with the aid of her research colleagues. By 2021, she expects to have a clear picture of how meal conversations between parents from low SEP and their children affect the way children think about nutrition. “This will give us a solid basis to develop a targeted intervention for parents, in this target group, that supports them and their children to eat healthily.”

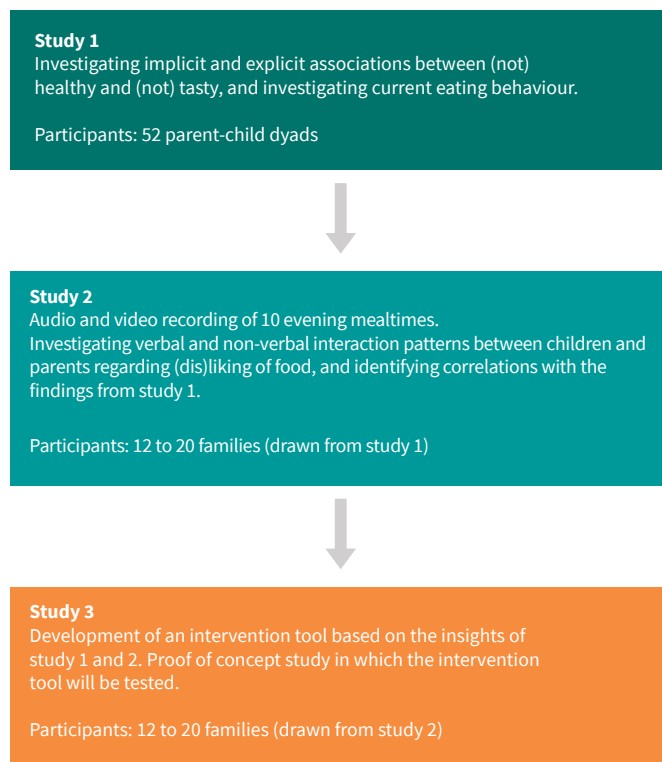


Figure 7: The 3 sub-studies and their interrelationship.

Other aspects of the activities of the Foundation

MSc students funded by the Edema-Steernberg Foundation

With assistance of the Anne van den Ban Fund we could select four candidates for the 2-year MSc programme at Wageningen University. Nominations came from the respective study programme directors. From the short list of potential candidates a selection was made jointly by representatives of the Anne van den Ban Fund and the Edema-Steernberg Foundation.

Name	Country	MSc study	Graduation
Started 2016			
Mrs. Adjoa Amofa	Ghana	Nutrition & Health 1)	2018
Mrs. Monica Mbutia	Kenya	Development & Rural Innovation 2)	2018
Started 2017			
Mrs. Pragma Pokharel	Nepal	Nutrition & Health 3)	2019
Mrs. Apple Espina	Philippines	Nutrition & Health 4)	2019

- 1) MSc thesis “The Association between Age at Menarche and Nutritional Status of Adolescent girls in Yendi Ghana” based on her work under supervision of Fusta Azupogo.
- 2) MSc thesis “Identifying challenges that affect SMEs focussing on nutrient-dense foods in Kenya”.
- 3) She will join the Ten2Twenty project based on Philippines for her thesis work.
- 4) Apple Espina had the opportunity to talk with His Majesty King Willem-Alexander, who was accompanied by Louise Fresco (president of WUR) on 23 June 2018 during the celebrations of 100 year Wageningen University. Apple is the dark haired person seen on the photograph from the back. (Photo right)



Senior staff involved from the six participating chair groups

Dr Razak Abizari (Univ. for Development Studies, Tamale, Ghana)
Dr Sanne Boesveldt
Prof. Hilde Bras
Dr Inge Brouwer
Prof. Edith Feskens
Prof. Marianne Geleijnse
Prof. Kees de Graaf
Dr Gerry Jager

Prof. Maria Koelen
Prof. Hedwig te Molder
Dr Saskia Osendarp
Dr Sabita Soedamah-Muthu (now Tilburg University)
Dr Lenneke Vaandrager
Prof. Emely de Vet
Dr Jeanne de Vries
Dr Annemarie Wagemakers

2019 and thereafter: consolidating research efforts and network building

It is the ambition of the Board of the Foundation and the principal investigators of the chair groups involved to extend the research program in 2019 with the appointment of a *postdoctoral researcher*.

The postdoc will (1) integrate and extend literature reviews and studies being executed in the ongoing PhD programs emphasizing the efficacy of organized efforts to support healthy eating behavior in groups with particular attention to lower socio-economic cohorts; (2) critically reflect on the values behind these behaviours, including the extent to which they match notions of 'the good life' and 'health'. Based on these insights, the postdoc will (3) provide the building blocks for an integrative theoretical framework. External funding possibilities will be explored and linkages built with other academic researchers, government organisations and NGOs to establish a research network on *Nutrition Disparity and Equity*.

January 2019	appointment postdoc
November 2019	conference <i>Nutrition Disparity and Equity</i> , kick-off research network (8 November 2019)
2019 - 2020	building consortia for acquiring external funding (for example National Science Agenda)
January 2021	finalizing postdoc research

Colophon

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