

**Per Pinstrup-Andersen**

# **A Journey Through Food Systems**

**How agriculture, food insecurity  
and malnutrition  
formed my professional life**

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Malnutrition Formed My Professional Life**

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*This book is dedicated to my grandson  
William Pinstруп Huey with love,  
and written in memory of my daughter Charlotte.*

## PROLOGUE

It was close to bedtime in Los Baños, Philippines, when I came back to my room. The discussions over dinner and the day's presentations at the International Rice Research Institute's (IRRI) international nutrition conference were still very much on my mind. Why are so many kids starving? And why is such a large share of the world's population eating an unhealthy diet? Every day, thousands of children are starving to death in the midst of the world's plethora of food. Why? Thanks to many years' of research, including what I had done, and experience from a few countries with enlightened governments during some periods of time, such as Costa Rica and Sri Lanka, we know why. Because those in power, whose kids are well nourished and who could provide a socioeconomic environment that would make a healthy diet available for everybody, have other priorities. But surely there are policies compatible with these priorities that would reduce child mortality and help more people get access to healthy diets. What are these policies and how do we, the policy analysts, convince policymakers to implement them? After many years of looking for the answers, I was still searching.

Did today's conference and dinner conversation add to my understanding about these and related matters? No, not really. Like so many other conferences I had attended, this one confirmed to me that we—the policy analysts—were stuck conceptually, intellectually and empirically. Millions of kids continue to starve, die, or grow up with impaired brains and low economic productivity. Those

who are lucky enough to enter adulthood will most likely have malnourished children. A vicious cycle that more talks, more conferences, and more papers and books could not break. What was needed was action of the kind we—the policy analysts—did not have the power to bring about. Am I, by continuing to do policy analysis and make recommendations that I am unable to implement, just an actor in a rigged game?

Although jet lags rarely interfere with my sleep, the 12-hour time difference from Washington, DC, from where I had departed, meant that I was wide awake. Actually, on this trip, I had made stops in Brussels and Copenhagen for brief meetings, so the change of time zones was done in phases. I frequently combined country visits to cut down on travel. Before I had to slow my brain activities to get ready for sleep, I needed to do a bit of homework to be ready for the next day's continued conference. Maybe it would be more productive than today's. So, to take a few minutes to decouple, I turned on the TV and found BBC. The very first picture on the tube was a fading glint of a Sainsbury store. The journalist had finished the related story and moved on to something else. I had no idea what the story was about—maybe a strike at Sainsbury or a decision to start selling genetically modified food—and I went to bed without knowing that picture on the television related to the most horrible thing that had ever happened to me. My life was violently changed forever, and my daughter Charlotte had lost hers.

When my wife Birgit called the next morning and said that she thought Charlotte, who worked outside London at the

time, might have been on one of the trains that had collided near a Sainsbury store outside London, I mobilized all my positive thoughts trying to believe that it could not be. It could not be! Subjective probabilities have been an important guide for me in my adult life, and the probability that Charlotte would be on that train at that time was very slim. Or so I wanted to believe. Also, even if she were on the train, she would surely not be seriously hurt. But wishful thinking did not work. I found out in the hardest of ways that probabilities are very poor predictors of what may happen to an individual. The results of Birgit's efforts to get information about Charlotte's whereabouts pointed in a horrible direction, and we agreed to meet in London asap. My flight from Manila to London was the longest trip I have ever taken—or so it seemed and confronting the truth in London was the hardest moment of my life.

But this essay is about my professional life, so why do I begin with something so very personal? Because this, my worst nightmare that became reality, had an immense influence on both my personal and professional life and because of the lessons I drew from it. What happened that morning of October 5, 1999, on the railroad tracks outside London had a huge impact on how I thought about my work and what my priorities should be. It motivated me and it brought emotion into my work, not by making my analyses less scientifically valid but by focusing on what matters and adding urgency into the application of the results of my work for policy action. It strengthened my motivation to do everything I could with the intellectual, physical, and material resources at my disposal to reduce



the number of parents that would suffer the way I did and help as many children as possible to grow up to be healthy adults. A child's death was not just statistics. It was real human suffering of the worst kind. The importance of combining emotion with results, from economic analyses of how various policies would influence health and nutrition in the delivery of the results to policymakers and the news media, had become clear and justifiable. And it was urgent. I no longer felt that adding emotion, in efforts to get action, reduced the validity of research-based recommendations.

The pain of losing a loved one, whether a child or a 32-year-old daughter, like Charlotte, was brought home to me in the most cruel way imaginable. The statistics about the number of children who died from starvation, malnutrition, or some other preventable cause, suddenly came alive. Not only was the future stolen from those who died, but every one of these millions of children, who die every year, have a mother, a father, and maybe siblings, who suffer the pain that I suffered. No, the pain is not less because you are poor or because you have many children. The psychological and material pressures you are under may cause you to react differently, but the pain is still there.

Every life is precious, and the value of a life is the same for all lives. Or so the saying goes. It ought to be so, but it is only true in its most abstract form. Just think of wars. The subjective or perceived value of a person's life and the strength of empathy for that person are both a function of the relationship that exists between the person

assessing the value or expressing the empathy and the person being assessed or benefitting from the empathy. The distance—whether psychological, emotional, or physical—between the two persons may be a useful indicator. In my many trips to developing countries, I have seen many malnourished and unhealthy children and adults, and I have cried with mothers who just lost their little ones, but I have never cried so much as I did after Charlotte died. The distance is key, but I believe Charlotte's death reduced the distance I perceive to the child that just died in Uganda or India and the empathy I feel toward their parents. It enhanced my perceived urgency to take action.

At the time of Charlotte's death, I had gradually built up a capacity to estimate how economic policy and other government action could best be designed to improve food security, nutrition, and public health, with the ultimate goal of contributing to a world in which everybody has access to a healthy diet without doing damage to natural resources. Should I, with the much stronger focus on reducing child death as the ultimate goal, now change to a different kind of work with a shorter distance between the output of my work and child survival. After all, results from policy research would need to be translated to action and could be derailed before ever having an impact on a child. After some soul searching, I concluded to continue policy analysis and training but with a much stronger focus on translation of research results to action, aimed at child survival and well-being. This would involve getting a better understanding of how such action could be made compatible with decision-makers' other priorities. And it

would imply a much better understanding of communication. For that to happen, I benefitted greatly from interaction with Tina, our daughter, whose PhD was on that subject.

In this book, I discuss my professional journey from being a 14-year-old farmworker to Director General of the International Food Policy Research Institute and on to becoming the H. E. Babcock Professor at Cornell University and a World Food Prize Laureate. As I write this book, I am Professor Emeritus at Cornell University and Adjunct Professor at University of Copenhagen.

## INTRODUCTION

This book is an attempt to provide a synthesis of my professional life. As shown in the chapters to follow, this has truly been a life of learning. I have been extremely fortunate, lucky, and privileged, both personally and professionally, but in this book I will discuss my personal life only insofar as it has interacted significantly with my professional work. As far back as I can remember, I have been ambitious, taking advantage of opportunities presented to me, always looking forward to new challenges, and rarely looking back. Even after formal retirement, I kept looking for new challenges, interesting new ideas, and new ways to improve food systems and make the world a better place for people who have been less fortunate than me. This synthesis is an effort to look back. Where have I been professionally speaking? What have I done? Has it made a difference? And if so, to whom? Are children alive and doing well because of my work or was it just an illusion to think I could do good? What are the lessons from my experience? Yes, although I am writing about many aspects of food policy and related matters, this book is about me, and the main purpose of writing it is to take stock of what I have done and accomplished, if anything. I hope it may be of interest to others, including my closest family and maybe some of my friends. In particular, I am hoping that William, my grandson, will derive inspiration from my work as he proceeds to make the world a better place.

With reference to the saying that, “it is hard to be humble when you think you are so great,” I realize that anything

positive I say about myself may be interpreted as bragging. Particularly, coming from a country heavily influenced by the Law of Jante (do not think you are anybody special and do not be overtly personally ambitious), I hope I can avoid the appearance of bragging by keeping in mind another saying that “you should not be so humble because you are not that great.” I recently ran into another saying worth remembering: “Be sure you can live up to your own hype.”

My parents brought me up to be honest, to work hard, and to learn to take care of myself. I was brought up with love but empathy for those less fortunate, and for those I did not know, came later. In fact, it was not until I began reading about poverty, hunger, and other human misery in developing countries, I realized that much human suffering was not self-inflicted but a result of where and into what social and economic environment you happened to be born and what opportunities came your way. It was at that point—early in graduate school—that I decided to change my professional focus from agricultural marketing to economic development and poverty alleviation.

Ever since then, I have been driven by an ambition to improve the lives of the millions of people suffering from human misery, some of whom I have witnessed in my travels and stays in developing countries. I have been able to follow this drive without personal or professional sacrifice. I have done well by trying to do good. I want to believe I have made a difference in the lives of people less fortunate than me, but I have no proof.

Whatever accomplishments, which I may claim, have been determined or heavily influenced by my wife, Birgit, and my daughters Charlotte and Tina, whose love and emotional and intellectual support were ever present, and by a large number of mentors, colleagues, and friends. Without them, I would have been able to do little. I am mentioning several in the proper context throughout the book, but there are many more who have played a very important role in my professional life. At this point, I want to mention and show my appreciation to the following individuals who have been particularly instrumental in my professional development and work. They are listed in alphabetical order:

1. **Alan Berg**, World Bank (retired). While Nutrition Advisor to the World Bank, Alan provided tremendous support to me, as I tried to promote the notion that nutritional impact should be incorporated in agricultural planning and project design. His strong and unwavering support made a critically important impact on my work on the agriculture–nutrition links.
2. **Mary-Catherine French**, Division of Nutritional Sciences, Cornell University. Mary-Catherine was an outstanding administrative assistant, who handled the administrative work associated with my research, teaching, and consulting work while at Cornell. including the period when my chairmanship of the CGIAR Science Council added much additional administrative work. She did her work in the most efficient, effective, and pleasant manner.

3. **Ruben Echeverría**, Past Executive Secretary of the CGIAR Science Council whose outstanding contributions to the Council's work and our productive collaboration made my work as Chair easy and pleasant.
4. **Jerry Grant**, Centro Internacional de Agricultura Tropical (CIAT) (deceased) who, as director of CIAT believed in me and my professional qualifications and gave me the opportunity to get a rewarding start of my professional career in agricultural development.
5. **Jere Haas**, Professor, Cornell University who, as Director for Cornell's Division of Nutritional Sciences, hired me back at Cornell, after I finished as Director General (DG) of the International Food Policy Research Institute (IFPRI), at an age when many universities are less likely to hire.
6. **Jean-Pierre Habicht**, Professor, Division of Nutritional Sciences, Cornell University. Jean-Pierre became an invaluable friend, colleague, and mentor during my stay at Cornell. Beginning with his guidance in the area of nutritional surveillance—an area I was not very familiar with but was responsible for—from the time I arrived in 1987, and subsequently throughout my research and teaching, Jean-Pierre taught me most of what I know about epidemiology and its application to health and nutrition. Together, we combined economics and epidemiology, not only applied to nutritional surveillance but to food and nutrition policy analysis in general.

7. **Susan Henry**, Professor and Dean of Cornell's College of Agriculture and Life Sciences (CALS) who was instrumental in my appointment as the J. Thomas Clark Professor of Entrepreneurship and subsequent collaboration with the Entrepreneurship Program.
8. **Ira Hollar**, Professor, Oklahoma State University (deceased), who was instrumental in getting me accepted for graduate work at Oklahoma State University. His call to the head of the Department of Agricultural Economics, while he was in Denmark with a group of students, to suggest that I be accepted for graduate work, opened up professional opportunities I would probably not otherwise have had.
9. **Per Holten-Andersen**, Professor and Rector, Royal Veterinary and Agricultural University (KVL) for nominating me for Honorary Alumnus at University of Copenhagen.
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11. **John Mellor**, who, as Director General of IFPRI, gave me the opportunity to expand my work on food consumption and nutrition economics and policy in a rewarding international environment and to strengthen



my standing in the international development community.

12. **Wendy Merrill**, Administrative Assistant, who played an important role in the creation and management of the Cornell Food and Nutrition Policy Program (CFNPP).
13. **Jørgen Møllegaard**, Agricultural Counselor, Danish Embassy in Washington (deceased), who took the initiative for my nomination for the World Food Prize. He was an invaluable colleague and friend.
14. **Henning Møller**, farmer and head of the Bislev Milk Tester Cooperative. Henning hired me as milk tester at an age of 16 and without any prior experience. He gave me a chance to prove that I could do the job as Denmark's youngest milk tester.
15. **Malden Nesheim**, Professor, Cornell University, whose belief in my professional qualifications and his patience and insistence that I had a place on Cornell's faculty opened professional opportunities for me in academia and international nutrition that I would otherwise not have achieved. Over the years, Mal has become an invaluable friend.
16. **James Plaxico**, Professor, Oklahoma State University, who, as Head of the Department of Agricultural Economics, accepted me as a graduate student and graduate research assistant, without a written application or any other paperwork. He gave me very

rewarding opportunities to pursue graduate studies and practiced tough love to guide me to what turned out to be very beneficial for me.

17. **Kenneth Quinn**, Ambassador and President, World Food Prize Foundation, whose unwavering support for me and other Laureates made a great difference to my effort to pursue the goal of the Prize to assure food security for all.
18. **Kathy Rasmussen**, Professor, Division of Nutritional Sciences, Cornell University. Kathy was a great mentor, teaching me a lot about nutrition (I have never taken a university-level nutrition course and I had a lot to learn to help assure that my nutrition economics and policy was based on at least a basic knowledge about nutrition). Kathy and many other nutritionists I have met over the years were always willing to elevate my knowledge and help me avoid the most severe mistakes caused by my ignorance of the subject.
19. **Vernon Ruttan**, Professor, University of Minnesota (deceased), who on at least two occasions, expressed strong support for my professional qualifications, that influenced the job opportunities I was offered. His research also served to guide me towards my economic analyses related to agricultural research and technological change.
20. **David Sahn**, Professor, Cornell University, who played a major role in assuring success in our CFNPP work. I also owe David a great thank you for taking

the initiative to organize a Festschrift and the related workshop for me at Cornell. He is a great colleague and friend.

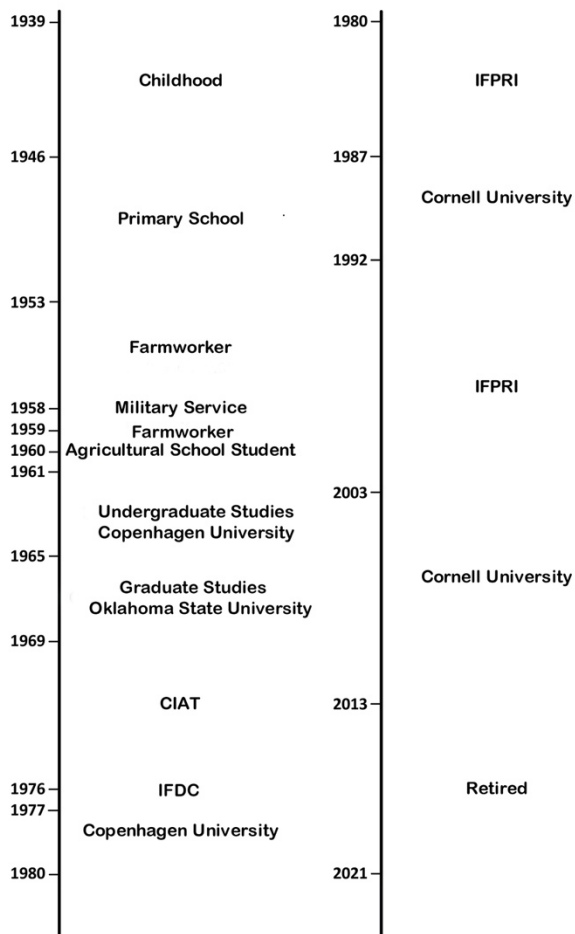
21. **Ebbe Schiøler**, Independent Advisor, whose outstanding writing skills motivated me to improve mine. Ebbe's co-authorship of *Seeds of Contention* was invaluable for its success, and our many conversations contributed greatly to my understanding of food policy.
22. **Patrick Stover**, Professor and Director, Division of Nutritional Sciences, Cornell University. Patrick became division director after I had joined as the H.E. Babcock Professor Food, Nutrition and Public Policy. His support to my research, teaching, and consulting was strong and unwavering throughout the subsequent period and made it possible for me to pursue my own professional priorities within the overall Division priorities and needs. He never once interfered with the research and teaching priorities I wanted to pursue.
23. **Erik Thorbecke**, Professor Emeritus, Cornell University. Erik was the H. E. Babcock Professor when I was negotiating with the Division of Nutritional Sciences for a tenured faculty position instead of a fixed-term position as Head of the Cornell Nutritional Surveillance Program. The Division did not have a line for a tenured professor but Erik agreed with the Division Director Malden Nesheim that a bridge could be established to the Babcock chair, so that when he retired, the temporary lines I would initially occupy

would disappear, and I would take over the Babcock Chair. Without the bridge, it is unlikely I would have come to Cornell in 1987.

24. **Luther Tweeten**, Professor, Oklahoma State University, who, as my major professor and dissertation supervisor, provided excellent guidance throughout my graduate work, while strengthening my analytical and writing skills. He taught me how to do applied policy research and how to provide effective supervision of graduate students.
25. **Klaus Winkel**, Danish International Development Agency (DANIDA) under the Danish Ministry of Foreign Affairs (retired), who strongly supported my application to be DG of IFPRI and who played a major role in subsequent Danish financial support of IFPRI. I have benefitted from many constructive and pleasant conversations with Klaus about various aspects of food policy.
26. **Edith Yalong** (deceased), who as Secretary and Administrative Assistant provided invaluable administrative support to me as IFPRI Director General.
27. A large number of other collaborators and colleagues who made my work easier and more productive and who contributed to the achievement of the professional goals that we shared, including but not limited to Suresh Babu, Howdy Bouis, Lawrence Haddad, Peter Hazell, Eileen Kennedy, Joachim von Braun,

and Klaus von Grebmer. I apologize to those I have left out.

The rest of the book consists of 15 chapters. Chapters 1–11 provide a synthesis of my work for each of 11 periods of my life, beginning in 1939, and ending 2021. A timeline is shown in Figure 1. Chapters 12–14 present brief overviews of my research and written output, teaching, and communication activities. The last chapter asks whether my work made any difference to the intended beneficiaries. A Curriculum Vitae (updated as of January 2021) is shown in Appendix 1, and a list of my writings is given in Appendix 2.



**Figure 1.** Timeline

*Notes:* CIAT=International Center for Tropical Agriculture;  
 IFDC=International Fertilizer Development Center;  
 IFPRI=International Food Policy Research Institute

## **CHAPTER 1**

### **Destination: Farmworker (1939–1961)**

#### **Childhood and teenage years**

Being the last of five children, I was a latecomer. My mother turned 44, and my father 49, within a month of my birth on April 7, 1939. My destiny was to become a farmer, and my training began early in life. Amazing how much child labor was embodied in a 25-hectare family farm, growing both crops and animals. No complaints. I actually enjoyed it, and it did not do me any harm. Time was found to go to school, and like other schools in rural areas, the one I went to made adjustments, so children were free from school attendance when labor demands on the farms were strong—as, for example, when the potatoes had to be harvested (we had “potato vacations”). Crop rotation and manual weed management with horse-drawn equipment reduced the needs for plant protection chemicals, and animal manure made up for most of the nutrients needed by the plants. The cattle was kept inside only during the winters, and the excitement expressed by the cows on the first spring day that they were let out—which is now advertised in Denmark as a happening to be seen—was fun to observe but not something attracting an audience, as it sometimes does these days. In fact, the production system was very similar to what later became known as organic production methods. It was very labor intensive, and there were plenty of opportunities for children to participate.

At the time, child labor was a natural part of farming. Weeding, helping with grain and beet harvesting, picking up potatoes, and collection of stones in the fields were some of the things that I remember doing at a very early age. Caring for the animals and milking, as well as plowing with horse-drawn plows became important assignments as I grew older (we complemented the horses with a small tractor when I was 14, because I made the mistake in telling my mother that I had been in a “perceived risk situation” on a day I was plowing with three horses. I do not know how exactly she convinced my dad to buy a tractor, but I believe her concern about my safety played a role).

I will never forget the perceived length of the rows of beets to be weeded with the hand hoe, and the large number of rows. It was hard work for a 10–14 year old. It was particularly hard on the back of a boy, who was tall for his age. So was the collection of stones. It seemed like a never-ending activity. There was always one more stone. Carrying feed to the cows and pigs and moving the manure with shovels and wheelbarrows were not to be confused with a walk in the park, either. When I was a kid, farming was hard work, really hard. Two of my brothers-in-laws stayed with it, and they were physically worn out before they turned 60.

As far as I know, it was always assumed by my parents, and by me, that I would follow a traditional process of working as a farmworker on various farms, to learn farming, followed maybe by a short stay at an agricultural school, and then becoming a farmer myself. That was my



first plan. Actually, it was an assumption, not a plan. Therefore, except for my uncle, who was a schoolteacher and who suggested to my parents that I should continue my education, neither my parents, who themselves had spent only the legal minimum number of years in school, nor anybody else perceived any need to spend more time in school than the seven years required by law. The general perception in the family at the time was that seven years of schooling, maybe supplemented with a short period in an agricultural school, was sufficient to become a good farmer. None of my four siblings had more than seven years of formal schooling, so why should I? Since I did not like school, because I was frequently mocked by the other kids, particularly, I believed, because I was taller and less well coordinated than the others at the same age, I was happy to finish school as soon as possible. I learned three things during the seven years: reading, writing, and arithmetic, and I was at—or close to—the top of the class in those three. As for the rest, not much.

Now out of school at 14, I was ready for full-time farm work. I did that with my father for two years, and then decided I wanted a change. My dad, who by then was 65 years old, was not particularly happy about that. He felt he could not manage the farm by himself, and he did not want to have to deal with hiring another farmworker. He suggested that if I stayed, I would gradually take over the running of the farm, and it would eventually become mine. I was not ready for that, and when I left home, my dad sold the farm. No hard feelings, as far as I know.

## Implementing my plan

At that time, I had a plan. I enjoyed working with animals, and I wanted to get the necessary training to become a manager of a large animal production unit. I had given up the idea of saving to buy my own farm (my destiny at birth). Farm prices increased much faster than I could save. I did have savings to pay for the first step in my plan: a three-month course at the Lundbæk Agricultural School to become a milk tester (*kontrolassistent*), an occupation my older brother had had for a while and something that appealed to my interest in animal husbandry and arithmetic. The training involved both lab work (testing milk samples from individual cows for fat and protein content) and accounting. I finished the course at the end of July 1955, and was offered a job as milk tester in Bislev Milk Testing Agricultural Cooperative (*Bislev Kontrolforening*) beginning November 1, 1955. At the age of 16, I believe I was the youngest milk tester in Denmark, and I was proud to accept an annual salary of five thousand Danish kroner (about US\$700). Not much, but more than I could earn as a regular 16-year farmworker at the time. While at Lundbæk, I completed a correspondence course in the feeding of dairy cows offered by the Agricultural Correspondence School and received a top grade (*Ug*).

I was looking for a job for the three months between finishing at Lundbæk and beginning my work as a milk tester. As luck would have it, I saw an ad in the local newspaper that Niels Kristensen, Kjemstrup Vestergaard needed somebody to take care of his cows during that period. I applied and got the job, which involved all

aspects of feeding, milking, clearing manure, and otherwise caring for the cows. I thought I did a great job, but the farmer was less impressed. In his letter of recommendation, he said that “Peder Pinstруп Andersen [this was before I changed my name to Per Pinstруп-Andersen], taking into account his age and that it was his first job, was interested in feeding, behaved well and was nice” [my translation]. Nothing to frame and put on the wall. My performance could only improve and it did.

A year later, at the end of my one-year job as milk tester, the chair of the milk testing co-op, Henning Møller said, in his letter of recommendation, that I completed my work to the complete satisfaction of the members and that my accounting was judged by the animal husbandry extension agent as first class (an accurate and careful reporting to headquarters). Mr. Møller also said that I had a pleasant way of interacting with people [my translation]. A note about the letters of recommendation to which I refer (and there will be more later): at that time, it was customary for farmworkers to ask for a letter of recommendation to be used for the next job application. Since these letters frequently were the only information about an applicant’s qualifications available to the potential employers, and since personal interviews were rare (and LinkedIn did not exist!), they could be very important.

Since it was discontinued long time ago, it might be useful to describe what the job of milk testing involved. Well, let me first set the stage. The co-op had about 40 members (I do not remember the exact number). Each member wanted to know the milk yield of each cow in order to decide how

much concentrate feed to give to each cow and to decide which cows to keep, which to sell, and whose offspring to keep for the purpose of increasing yields of the next generation and in this way to increase earnings. Straight forward. Higher yield leads to higher productivity and higher earnings. Since the price paid for the milk depended on quantity as well as fat and protein content, the milk tester's job was to provide data for all three. Each cow had to be tested 12 times a year, and the milk tester had to personally measure the quantity each cow produced at least every other time. Thus, on a given workday, I would be with one co-op member during evening and morning milking times, measuring the quantity produced by each cow and taking samples for later testing for fat and protein. After the morning milking was completed, I would bicycle to another member, who had done his own measurement and pick up the samples from each of his cows. I would then do the protein and fat testing, clean up all the equipment, complete the accounting, and write the results for each cow on a board hanging over her, for both farms.

That would take care of the morning. In the afternoon, I would complete the aggregate accounting, which had to be submitted to a national organization, move to the next farm and deliver the sampling and measurement equipment to the farmer who had to do his own measurements. The "movement" from one farm to the next consisted of loading two large wooden boxes or crates on a tractor or horse-drawn farm wagon or trailer. One of the wooden boxes contained all my personal effects. The other contained a centrifuge, the chemicals I needed, as well as all glassware, measuring equipment, buckets, etc.

The farmer would then deliver and unload the two boxes at my next home. I say “home,” because that was where I ate and slept. The farm where I did the work was where I stayed. During each of the 12 rounds, I would stay at approximately 20 different farms, but since I had to be at the farm that did its own measurements during the previous round, I ended up sleeping in about 40 different beds or sofas in as many days. I would repeat that five more times during the year. I met many interesting people, and I got a brief insight in how farming households lived. I also got to taste the food prepared by 40 different households. And the food was always good. Something special was made when the milk tester came, and it was customary to play cards after dinner. I was always on the move and I enjoyed it, except when I had to stay at farms where the only place to sleep was on a sofa considerably shorter than me, or when I slept in a room without heat during the winter.

I could have continued my easy life as a milk tester but decided to take the next step in my plan, which was to be an intern (*foderelev*) on a large farm, participating in cattle management. I got such a job on Lundgaard, Overlade, for a half year beginning November 1, 1956. I participated in all aspects of cattle management, including a project to monitor the yields to help select calves from the highest yielding cows. The project was part of a national network of such projects, each with 20 cows fathered by the same bull. The overall purpose was to decide which bulls should be used for future artificial insemination. The goals of the project were somewhat similar to what I had done in the Milk testing co-op, except that in this case, I was not responsible for the actual testing and accounting but

instead the manual work (milking, cleaning, etc.). I was there to learn all the aspects of cattle management. I was an intern, after all. Later, I became responsible overall for similar herds of cows on different farms. More on that later.

I will never forget the first 3–4 days on the job. From the very beginning I was to milk 20 cows twice a day. Using the milking machine was no problem, but each cow had to be after-milked by hand. Since I had not done any milking for more than a year, my fingers responded by becoming completely stiff with associated pain. Anyway, I survived, and after a week or so, my fingers had adjusted. I learned a lot and in his letter of recommendation, the head cattleman J. Birkemose said, “Per Pindstrup Andersen (misspelling Pinstup is not uncommon) was particularly interested in his work and executed it with much responsibility. Furthermore, he always got out of bed in time and was easy to interact with in the daily activities” [my translation].

I still stuck to my plan to eventually end up as a head cattleman on a large farm, and I now wanted experience from a much larger cattle herd than what I had experienced so far. I got that on Saltofte Gods, Svebølle, where I became an intern for six months, beginning May 1, 1957. I do not remember how many heads of cattle were on the farm, but my memory tells me “many.” I participated in all aspects of cattle management, and I do not remember any particularly remarkable issues from that job. As was customary at the time, I received a letter of recommendation, and in this one, the head cattleman N. Larsen, on

behalf of the owner of the farm, said, “he has shown to be a nice and very interested young man both within and outside working hours. Furthermore, he is a calm and humble young man and we have been happy to have him here” [my translation]. So far, all the recommendations had stated that I was a nice guy. Should count for something.

I was now ready for primetime, and I applied for and was selected for a position as Assistant with the National Research Laboratory for Cattle Research, with responsibility for all aspects of managing a project to monitor the yields of a herd of 20 cows, all offspring of the same bull (milk-ing, cleaning of manure, feeding, measuring milk output, accounting, and reporting results to the National Research Laboratory, and anything else to care for the animals). This was part of the Network I mentioned previously.

Beginning November 1, 1957, the job, which should have been for a year, was cut to half a year because the Danish Army said so, was located on another large farm called Vennerslund Gods, Nr. Alslev. I has a very similar position after having enjoyed 16 months of the Danish Army’s hospitality. More on that later. Again, the combination of hard manual work and more intellectually stimulating paperwork was much to my liking, and I continued to learn. Of course, another letter of recommendation was received. This one, by Sigvald Klausen from the Research Laboratory in Copenhagen, who stated that I “was an interested and responsible young man. His reports were always in good order and in addition, he has a very pleasant personality” [my translation]. Once again: I am a nice guy!

I checked in with 5<sup>th</sup> Regiment in Vordingborg on May 5, 1958, and “signed up” (“drafted” would be a better word, since it was not entirely voluntary) for 16 months of free room and board. I understood then—and still do—that every country has to have a defense force. I also understood that somebody had to populate the military, but it was not my preferred activity, although I was not a pacifist then, nor am I now. But it was with some negative thoughts, I joined 5<sup>th</sup> Regiment. They became stronger as I was handed a uniform way too small for me. The pants and sleeves were neither short nor long. Somewhere in between. This was the cause of some laughter among my fellow recruits and reminded me of the harassment I suffered in school. Not a good way to gain respect in the Army. Anyway, after a few efforts, the supply unit found a uniform of the right size, and the incident was soon forgotten (except it must have made an impression on me, since I still remember it 62 years later).

So what about the military? Was it fun? No, not really. But neither was it painful. First of all, we were not attacked, by the Russians or anybody else. So no war and associated suffering. Second, even as recruits, we were not treated as badly as some anecdotes would suggest. Yes, we were screamed at and sometimes treated in a way that seemed unfair, but so what? The world is unfair. Get used to it and fight back if you can. Third, it was a period of learning. So what did I learn? I learned that there was a world outside agriculture, a world that might be open for me, once I got out of the military. Just to illustrate that point: during part of the 16 months I was protecting my country, I slept in a room with 12 others. The person on



my right had a high school degree, and the one on my left bragged about never having worked a day of his life and presumably not having done much better in school. Others in the room came from a variety of backgrounds, both urban and rural. I am not sure how many had ever touched a cow, but I guess less than half. This gave me the courage to think about maybe altering the plan I had pursued single-mindedly. It planted the seed that would later germinate into a change of plan. Not that I was unhappy with my plan, but would it not be interesting to try something else? I had always liked working with numbers and one possibility I considered was to become an accountant. In preparation for that, I completed an accounting course offered by the military.

What else did I learn in the military? I learned not ever to give the higher-ups the idea that I liked being in the military or to try to show that I could perform the assigned tasks better than average, because you would then run the risk of being picked to go for corporal or sergeant training, with the implied extension of your stay in the military. The testimonial, which I received from the military upon the conclusion of my stay (the next best) seemed to confirm that I did okay but was not good enough to keep for higher-up opportunities. No mention of being a nice guy.

I waved goodbye to the military on August 29, 1959, as a member of the 10<sup>th</sup> regiment located in Nørresundby. Wasting no time and at least temporarily forgetting about becoming an accountant, I began a new one-year job as Assistant with the Research Laboratory for Cattle Research on September 1, 1959, this time in Køng,

Lundby, taking care of 19 dairy cows and 16 young bulls. My responsibilities were similar to those I had at Vennerslund, but this time I was completely on my own, responsible directly to the Research Laboratory in Copenhagen. Among all the jobs I had had up to this time, this one turned out to be the one I enjoyed the most. I never cared to have a supervisor close by. I was perfectly happy being on my own, and I had always enjoyed the company of dairy cows. I am not trying to be funny. I mean it. Most dairy cows are calm, and they rarely show displeasure or aggression toward you if you treat them well. Once in a while they may kick you, but nobody is perfect.

Yes, it was tough to get up at three o'clock in the morning to milk and feed the cows, carry out the manure, and what else you had to do, but one gets used to it. Kind of. The second milking was at 10, and if you were fast, you could squeeze in a breakfast and still get a couple of hours of sleep in between. Third milking and feeding was early evening, which permitted an afternoon nap. According to the chairman of the Cattlemen's Co-op, which owned the farm where I worked, I did an okay job. In the traditional letter of recommendation, he said that "he is an energetic and very capable young man and he has completed his work as research assistant in a completely satisfactory manner. He is also very nice and easy to work with. His behavior has always been outstanding" [my translation]. Again: A nice guy.

The cattlemen's association also kept several bulls on the farm to deliver semen for the artificial insemination

program. I had nothing to do with them, except when the person responsible for their care had a day off. Then it was up to me to deal with these very large and heavy bulls. Contrary to the typical cow behavior that I mentioned previously, the bulls expressed considerable aggression, and you were aware that you would always lose in a fight with any one of them. So, I was never looking forward to the bullman's days off. Nothing unpleasant ever happened between the bulls and me, but during the summer, when each bull had to be taken out to pasture, with no protective gear between him and me, I pumped a large amount of adrenaline.

The Co-op Farmers Association I mentioned previously also employed an extension agent to advise the members. He lived with his family in a house next to the farm. Every once in a while he would show up in the stable when I was milking the second time, that is, a little after 10 in the morning, greeting me with a "Good Morning" with a voice that apparently had not been active for very long. In principle, nothing wrong with that, but it occurred to me that my morning had begun more than seven hours earlier. My idea about another line of work, that came up while I was in the military, kind of resurfaced. Could I exchange my job for his? No, of course not, because he had spent four years at the Royal Veterinary and Agricultural University to become an Animal Scientist, a requirement to get a job as agricultural extension agent. He probably also had a high school degree to get into the University. So, no go. But wait, I did a little checking and I found out that you could get into the Agricultural University without a high school degree, if you could pass an entrance exam.

This was not possible for the main university. One reason for the entrance exam option was that you had to have three years of practical agricultural work experience to enter the Agricultural University, and it was judged that both a high school degree and three years of practical experience was too much to ask. Another reason may well have been that the Agricultural University was perceived to aim at a more practical and less academic training for which a high school degree was less important. The requirement for three years of practical experience and the admission without a high school degree were later abolished.

To pass the entrance exam, some of the existing agricultural schools, including Lundbæk, where I did my milk testing training, offered a 9-month course that would bring the student up to a level of knowledge in some subjects, such as mathematics, physics, chemistry, foreign languages (English and German), and possibly others, sufficient to provide the foundation for university level training, and hopefully, to pass the entrance exam. Although I had read several books about animal science and, of course, many other books, and although I thought I was well prepared in writing, reading, and arithmetic, I had not touched a textbook since I left seventh grade seven years earlier. I knew no foreign language, and I knew nothing about chemistry or physics. Should I try? Worst case scenario would be that I failed the exam and lost the money I had to pay for the 9-month course (and, of course, the lost earnings during the nine months). I decided to go for it; applied and got into the course offered at Lundbæk. It was really hard work, but the teachers were fantastic. To this

day, I do not understand how so much new knowledge could be propped into a head that had been away from formal learning for seven years, but I passed with a grade of 6,88 out of 8,00, considerably above the grade of 5 to pass. So I was in! I immediately changed my plan from manager of a cattle farm to an agricultural extension agent with focus on animal science. I did not want to leave the animals, particularly, the dairy cows, but I imagined that my work as an extension agent, should I ever reach that, would be more interesting with less hard physical labor.

## **CHAPTER 2**

### **An Undergraduate without a High School Degree (1961–1965)**

As I entered the Agricultural University in August 1961, I was fully aware that I was beginning studies for which I probably was not qualified. I perceived that I had a very serious handicap, compared to those students who had high school degrees. After all, they had gone to school for four years, during which time I had carried out cow manure. My inferiority complex became greater when I found out that those of us who did not have high school degrees could not become members of the student association. In hindsight, it was no big deal, but at the time it was a blow to a very ambitious person who wanted to fit in and be accepted as a real university student. It was also irritating that the regular dances arranged by the student association were for members only. In my past, I would attend Saturday night dances near where I lived, and it was disappointing to be told you were a second-class student with no access. I quickly got over it, by seeking other opportunities for parties and related entertainment. It took longer to get over the arrogance I perceived that students at the main university expressed toward students in the Agricultural University. Certainly, from an academic perspective, I perceived we were seen as being a lower caste—more like vocational students. Whether that was real or just in my head as an expression of insecurity, I believe there was, and still is, a tendency for many in academia to look down on agriculture and those working in—or related to—that sector.

I had no illusion that my 9-month course, in any way, measured up to what they had learned during the high school years. Surely, I was not the only one among the other 120 new students, who entered the Agricultural University that year, that did not have a high school degree, but *still*. The competition would be fierce, or so I thought. Whether the enormous chip I had on my shoulder was justified or not, I concluded that to do well during the next four years, I had to work hard. Hard work could help reduce the knowledge gap I felt I had. And it did! I did well academically. I got good grades in most courses and failed none. I have never seen any evidence about whether those who entered the Agricultural University with a high school degree did better, worse, or the same, as those who entered on the basis of the entrance exam. And, of course, it no longer matters.

I really enjoyed my four years at the Agricultural University. I did work hard, but there was also time to relax. To a young person from the countryside, Copenhagen offered entertainment opportunities that I had never enjoyed before. But leaving that aside (this book is limited to professional activities), I was busy pursuing the opportunities to learn, so I could achieve my plan to become a qualified agricultural extension worker with emphasis on animal husbandry. I understood that for students in the main university, it did not sound like academic studies! In any case, after a couple of years of study, I concluded that, since I had read several books about animal husbandry while I was working on the various farms, I did not gain as much new knowledge about animal science as I expected. On the other hand, I was very excited about what

I learned about agricultural marketing and economics. The topic I selected for my Bachelor thesis—Opportunities for Export of Danish Food Commodities to Japan—was a reflection of this somewhat new interest. An article reporting the major findings of my thesis research in *Tolvmands blad* became my first published article in Danish. That was in 1965. Although marketing and trade did not become my main area of work, it did play a significant role in my work over the next 50 years, as illustrated by the work on *Agricultural Trade Liberalization and the Least Developed Countries*, which I edited jointly with Niek Koning at Wageningen in 2007, and by several papers on the value chain (see Appendix 2 for a list of my publications). As I expanded my work on the food system and nutrition, I became very interested in the role of the food processing sector that I felt—and still feel—converted very healthy agricultural products to unhealthy foods, high in sugar, fat, and salt, and low in fiber and micronutrients. That, of course, came much later and was not on my radar screen when I was an undergraduate.

While an undergraduate, I became more interested in economic decision-making in the agricultural sector, and a leadership position in a cooperative now looked more interesting than being an extension worker in animal husbandry. So, when the time came to select among four subject areas available to the students at the time, I chose agricultural economics instead of animal science. Another change of plans. To this day, I believe that was the right decision for me. To further this change of plans, I thought I would need a Master of Business Administration after finishing my studies. It was not certain that I would be



accepted into a MBA program at Copenhagen Business School, but one thing that would help would be an advanced course in accounting. So, I completed such a course (*Handelsskolernes statskontrollerede prøve I bogføring*), offered by Købmandsskolen at Julius Thomsens Plads in Copenhagen with the grade mg+. Not a top grade, but obviously the best I could do. As discussed later, I never pursued a MBA but instead went to the United States for graduate studies in Agricultural Economics.

During the first couple of years at the Veterinary and Agricultural University, I attended a large share of the lectures and all lab sessions and worked hard on my own. However, as the studies proceeded, I became interested in work by the student organizations, and I became a member of the Danish Association of Agricultural Students in 1963 and Secretary General of the International Association of Agricultural Students (IAAS) in 1964. The IAAS was created in 1957 to provide collaboration and exchange among agricultural students everywhere through interaction among national agricultural student organizations. At the time I was Secretary General, 16 European and African national associations were members. The activities included annual conferences, student exchange, a periodic newsletter, and correspondence about relevant issues. The work was interesting but very time consuming. However, I was determined not to slow the completion of my studies because of the additional work. Instead, I cut back on leisure time, and I attended fewer lectures. It was at that time I wrote my first published article in English, an invited article about IAAS for the publication *Mediterranea*, Vol. 2, 1964, published by the Centre

International de Hautes Etudes Agonomiques Mediterraneenes.

Although I had savings from my years of work and was so very lucky to get into Nordisk Kollegium with free room and board, beginning May 1, 1963, I still wanted to work during the summer vacations. I spent a summer working on various agricultural policy issues at the Danish Agricultural Council but that led nowhere. My English was questionable, but I had learned some during my 9-month course at Lundbæk (enough to pass the entrance exam) and practiced using it during a two-month stay at Nottingham University's School of Agriculture in Sutton Bonington during a summer session. So, the next summer, I applied for—and obtained—a job as a guide for 4-H groups and groups of Future Farmers from the United States who visited Denmark to learn about Danish agriculture. One of these groups, which I will never forget because it changed my life, was a 4-H group from Oklahoma, led by Professor Ira Hollar, a poultry professor at Oklahoma State University (OSU).

So how could one of several 4-H groups, that I would serve as guide for a couple of days, change my life? Well, here is how. On our way to visit a dairy farm, Professor Hollar and I were sitting in front of the bus talking. This very innocent small talk question did it. He asked: "What are you going to do when you finish your undergraduate studies?" I answered that I had not yet made any plans, but I was thinking about applying to an American university for one year of graduate work, hopefully getting a master's degree. What I did not tell him was that I was

merely looking for a way to get to the United States. Both my dad and older brother had spent extended periods of time in the United States, and it sounded like a place to get to know. Since I did not have any money, I thought I might be able to find funds to cover my travel and stay if I went for a stay at a university, maybe taking a one-year master's degree. My plan was not to stay long in the United States. I wanted to get back to get a position in a Danish co-op and apply for the MBA program. Taking me up on the answer I gave him, he said: "Why don't you come to OSU"?

Other than the musical, I knew nothing about Oklahoma, and I had never heard of OSU. But I saw no reason to reject the idea outright. Next morning, as we were again on the bus on our way to visit some Danish co-op, Professor Hollar told me he had called the chair of OSU's Agricultural Economics Department, Professor James Plaxico, and suggested that he had met a Danish student interested in coming to OSU for graduate work. The response was immediate and very positive. The department head took Professor Hollar's recommendation, and without any further ado, admitted me to the OSU Graduate School. With the knowledge I now have about admissions procedures at US universities, I was incredibly lucky back then. Yes, Professors Hollar and Plaxico knew and trusted each other. But still! In any case, I replied that I could not accept, because I had no money to pay tuition. "Oh", he said. "I did not mention that you also have a fully paid assistantship, covering tuition and living expenses, initially for a year but with possibilities for extension." I said, "Thank you, I accept." I could not believe it!

Now I just had to find funds to cover travel expenses. Thanks to strong support from Professor Milters, Rector of the Agricultural University, Ford Motor Company selected me as Ford International Fellow in June 1965, with funds to cover the cost of the 2-month Economic Institute at the University of Colorado (more on that later). In addition, I received economic support from the Fulbright Foundation and the Agricultural Hude Fund. I became *cand.agro.* in March 1965 and spent most of the time, until departure to the United States, working for the Danish *Agronomforening* (the Association of graduates from the Agricultural University), helping with the preparation of a book about the members.

As I already mentioned, this book is about my professional life and not my personal life. However, as mentioned in the prologue, sometimes the two are not easily separated. When I told Birgit Lund, my fiancée about the offer to go to Oklahoma and that I wanted her to come with me, she was ready, and we proceeded to get married. The wedding took place Saturday, June 16, 1965, and I left for the United States, Monday, June 18. Birgit stayed behind to finish her degree and joined me in Colorado in August. We made up for the short honeymoon by spending a few days in Estes Park, Colorado, after she arrived in late August. During the 56 years that we have been married, Birgit has given me, not only her love, but her full and unwavering support for me to pursue my professional career. She gave up her dreams for a medical career when she came with me to the United States in 1965, and she gave up her medical studies in Denmark to again come with me to the United States in 1980. She has

always been there when my job required both of us, and she was always there for our children, filling in for me during my extensive travel and long working hours.

## **CHAPTER 3**

### **On to the United States for Graduate Studies (1965–1969)**

#### **The Economics Institute**

As mentioned earlier, I was fortunate to receive funding to attend the Economics Institute at the University of Colorado, Boulder, before beginning my graduate work at OSU. The purpose of the Institute, which ran for two months, beginning June 24, 1965, was to help prepare foreign students for graduate studies in economics at US universities by identifying study-related strengths and weaknesses of each student and trying to remedy weaknesses while helping students and their advisors to select the courses appropriate for the level of knowledge and preparation of each student. Upon arriving to the Institute, each student was given a test in the following subjects: English, Economic Theory (Macro and Micro), US Economy, Mathematics, and Statistics. The results were used to tailor a program for each student for the duration of the stay at the Institute. Another test was given at the end of the stay, and the results were shared with the student to help select the right courses once at their host university. My main weaknesses were calculus, matrix algebra, and mathematical economics, while my strengths were English, basic mathematics, and elementary statistics. My performance in Economic theory and US economy was average. My GRE advanced test in Economics was 550, or slightly above the median score for all the Institute students.

In my opinion, the idea of the Economics Institute was brilliant, because it gave foreign students, including me, a much better start to graduate studies, with less failures and missed opportunities, both in terms of the content of the studies and in the way graduate teaching was done in the United States. Because I have such high regard for the concept on which the Institute was built, it was a particular joy to be recognized as a “Distinguished Alumnus” of the Institute in 1993. Personally, I benefitted from an introduction to matrix algebra and calculus, which I knew nothing about prior to coming to the Institute. Obviously, I did not learn as much about calculus as I thought, because I had to drop a course in advanced calculus during my first semester at OSU! That, in itself, was not a major problem, except it ruined my chance to finish a non-thesis Master of Science Program in one year, as I had planned. I dropped the course too late to have it replaced by another and at the end of the year I was short 3 credits. My assistantship was for one year only! What to do?

The department head, who had accepted me with assistantship, purely on the basis of Prof. Hollar’s phone call, came through again. He offered to continue my assistantship for another three years or longer if I enrolled in a PhD program. That way I could finish my Master of Science and continue to a PhD without any fanfare. As much as I appreciated his kindness, it did not quite fit with my own plans, which were to move to Stanford University for my PhD at the Food Research Institute. I felt the Food Research Institute at Stanford would fit my professional interest really well. I had, in fact, applied and been accepted at Stanford, with a full fellowship to begin in Fall

1966, after completing my one-year Master of Science Degree at OSU. But the completion of the master's degree was a condition for acceptance. The obvious solution was to spend one more semester at OSU to earn the 3 missing credits and take additional courses useful for my future Stanford PhD. But for that to work, I needed an extension of the assistantship to cover tuition and living expenses, although Birgit's salary from her work at the university might keep us out of starvation. Professor Plaxico agreed that I could stay for another semester but said that he could not extend my assistantship unless I stayed for a PhD. I will never forget his statement that he could not ask the Oklahoma taxpayers to pay for that semester if they did not get anything in return. I thought at the time it was a lousy argument, but he would not budge. He obviously wanted me to stay for whatever reason. I can appreciate now that I should have taken it as a compliment. At the time, I interpreted it as a lesson in tough love, which I could have done without. My choice was to return to Denmark without completing the degree or accept Professor Plaxico's offer. I stayed and I have never regretted it.

But I am getting ahead of my timeline. Back in Colorado, I saw the largest concentration of cattle on the smallest area of land, I had ever seen. I am talking about the Monfort Feedlot in Greeley, not far from Boulder. Fifty thousand head of cattle in a very small area! This was mind boggling. I heard later that the size had actually doubled to 100,000. I do not know whether that is true or whether the feedlot still exists. I was so impressed by what I saw and wondered whether that was a view of what was



to come, so that I wanted to share what I had seen. That resulted in an article in *Tolvmands blad* in 1966 about feedlots in the context of the current and future global beef production and trade.

## **Oklahoma State University**

Sometime in late August or early September 1965—I do not remember the exact date—Birgit and I arrived in Stillwater, Oklahoma, by bus from Colorado. It was hot, it was very hot, like 110°F or 43°C, in the middle of the day, and although it cooled down a bit at night, it was a shock coming from the pleasant mountain climate of Estes Park, Colorado, and the cold Danish summer. We managed. Since this book is about my professional activities, I shall leave out the issues related to getting settled in Stillwater.

As I mentioned previously, I began my graduate studies as a research assistant, a position I kept until July 31, 1968, when I was offered a position as Instructor until I completed my PhD in April 1969. I was very pleased to be promoted to Instructor, even before I had completed my PhD. Little did I know that it actually meant a lot of additional work. As a research assistant, I worked with faculty members, mostly my dissertation advisor, on various research and writing activities, but now I suddenly had complete responsibility for teaching an undergraduate course in Agricultural Marketing for, it turned out, about 80 students. The concept of a steep learning curve took on a whole new meaning for me. I had never taught before, and a group of 80 undergraduate students might not be the most convenient way to learn. I was also trying to finish

my PhD dissertation. Nevertheless, with very long hours, it all worked out, and I learned a lot about teaching.

As I mentioned earlier, my initial plan for my stay in the United States—which was to spend a year learning as much as I could about agricultural marketing, get my Master of Science Degree, and return to Denmark—was replaced with a longer stay in the United States. As I finished my MS and continued to complete my PhD, I became more interested in economic and agricultural development and related government policy in developing countries. I cannot pinpoint a particular book or event that caused me to change interest. I believe it just came gradually, and my new interest grew as I became more aware of what was happening in developing countries, through coursework, reading, and interaction with faculty and other graduate students.

When I was getting ready to select a topic for my PhD dissertation, it was clear to me that it had to be about food policy for developing countries. However, I had never been to such a country. Fortunately, two faculty members from the agricultural economics department were out-posted to an OSU project in Colombia, South America, and the project offered opportunities for PhD students to travel to Colombia to do their dissertation fieldwork. Great! That was just perfect. I went to the aforementioned department head, James Plaxico, and told him I was going to go to Colombia. His answer was “not so fast.” You should work with the department’s best faculty member, and he is here, not in Colombia! If you do your fieldwork in Colombia, you will need to be supervised by one of the

faculty members stationed there. In his opinion, that was not a good idea. He wanted me to work with Professor Tweeten. Yes, but I want to go Colombia, I said. I have never been to a developing country, and this is my chance. His answer was: “You stay here and do your dissertation under Professor Tweeten’s supervision, and I will make sure you get an opportunity to go to Colombia after you finish your PhD.”

He never explained how he was going to do that, but I assume he was expecting to continue to have faculty members in the OSU project, and I could replace one of those already there. I do not know, but I followed his advice, and it turned out that he did make sure I went to Colombia, but not as part of the OSU project. This incident was another illustration of James Plaxico’s tough love. I am convinced he wanted the best for me, and he succeeded! I owe him big time. It just so happened that a new International Research Center for Tropical Agriculture (CIAT) was being established in Palmira, Colombia, when I was in the last year of my graduate work and the Center was looking for an agricultural economist. The CIAT director, Jerry Grant, was an Oklahoman. He was a friend of Professor Plaxico, and he came to OSU to look for candidates for the position. Guess what, we had a match. I met with Dr. Grant, and he invited me to CIAT for a job interview.

Of course, I went. As part of the job interview, I had a long lunch with Gerry Trant, a Canadian economist posted to the Universidad del Valle in Cali by the Rockefeller Foundation, and who was to be posted to CIAT. The lunch

did not go well. Dr. Trant asked questions that I could not answer to his satisfaction. He was rather aggressive, and I believe (without proof) that he was determined that I should not have the job. I still today do not know why, but it is probably safe to assume that he did not think I was qualified. Unfortunately, I did not get to ask him before he passed away. I will never forget I was sitting outside Dr. Grant's office when the two met to discuss my candidacy. The meeting took a long time, and finally, Dr. Trant came bursting out of the door, fuming, and walking past me in a way only a very angry person can. After that, Dr. Grant offered me the job and I accepted. Not a good way to begin a job, particularly, because the man, who obviously did not want me there, was going to be my supervisor, a responsibility he never really took upon himself. About a year after I joined CIAT, Dr. Trant went back to Canada, and I was left to develop my own program, which suited me fine. More on that in Chapter 4.

Back at OSU, Professor Luther Tweeten agreed to be my graduate supervisor. He was very instrumental in orienting me to agricultural policy and global issues. He also helped me learn how to do applied economics research and prepare the results for publication. We wrote several publications together about topics, such as urban sprawl, the world food problem, synthetic dairy and meat products, US foreign assistance programs, and food aid. We also published four articles based on my dissertation research on food aid, two as chapters in books and the other two in the *American Journal of Agricultural Economics*, one of which was selected by the Journal as the best article published in 1970 (all listed in Appendix 2).

Dr. Tweeten's supervision of my research, leading to my PhD dissertation was invaluable. Rather than telling me what to do, he held back as a good thesis supervisor should, letting me develop my own work but always being available to discuss my work, answer any questions I might have, and suggest options for further work. Since then, I have supervised many MS thesis and PhD dissertations, and I have tried to follow his approach. The dissertation was selected for the Doctoral Thesis Award from the American Agricultural Economics Association (AAEA) in 1970.

While at OSU, I also found time to write articles in Danish for *Ugeskrift for agronomer* about various topics, including training of agricultural economists in the United States, size economies in US food processing firms, vertical integration, and synthetic meats and dairy products.

## **CHAPTER 4**

### **Seven Years of Agricultural Development in Colombia (1969–1976)**

I joined CIAT as an agricultural economist on May 1, 1969, and stayed until January 31, 1976, when we moved to Florence, Alabama, for me to become Director of the Agro-Economic Division at the newly established International Fertilizer Development Center (IFDC), located next to the Tennessee Valley Authority in Muscle Shoals. More on that in Chapter 5.

As mentioned previously, I joined CIAT soon after it was created. Several Rockefeller Foundation staff members, who had been posted to various countries, were moved to CIAT, but I was the second scientific staff member to be hired directly by CIAT. Eduardo Alvarez from Mexico was the first. At the time, CIAT's administrative office was in a hotel in Cali, and the scientific staff was placed with Colombian institutions. I was given an office at Universidad del Valle in Cali, where the Rockefeller economist Gerald Trant was also housed. I was later moved to an empty dairy farm on a large extension of land outside Palmira, which had been granted to CIAT by the Colombian government. The dairy farm was to be used for office space until the new CIAT headquarters buildings were built. That was as close as I got to dairy cows while in Colombia.

Joining CIAT became the beginning of 27 years of association with the network of international agricultural research centers, later named the Consultative Group of

International Agricultural Research (CGIAR): About 7 years at CIAT, 17 years at the International Food Policy Research Institute (IFPRI), and 3 years as chair of the CGIAR Science Council.

The role of economists at CIAT was not clear at the outset. In my meeting with the director, Jerry Grant, soon after I arrived, he emphasized that he was looking for an economist “with shit on his boots.” He also said that the role of an economist at CIAT was not to write journal articles or to fundraise, but to be an integral part of CIAT’s efforts to enhance productivity of the commodities included in CIAT’s portfolio. But other than that, I did not get much guidance about what I should do. I believe many of the agricultural scientists, as well as senior leadership, did not see economics as something useful for CIAT’s mandate. Without the strong push by the Ford Foundation, particularly, Lowell Hardin, economics might not have been included in the scientific staff portfolio from the beginning. Also, I believe in response to the Ford Foundation’s strong suggestions, two other international agricultural centers, The International Rice Research Institute (IRRI) and the International Center for Research on Maize and Wheat (CIMMYT) had economics in their research portfolio at the time.

Since I probably had more practical farming and more cow shit on my boots in my past jobs than most or all of the agricultural scientists, I was irritated by their insinuations that I did not really belong to the “agriculturalists.” The “shit on your boots” statement kind of added to this situation. So, in order to gain credibility among them, and

to at least get mud on my boots, I decided to show that I could grow cassava, one of the CIAT commodities, and I did. I was allocated a piece of land on CIAT's farm and off I went. I am not sure it helped my reputation, but I learned to grow cassava. That was useful when I was later assigned to the cassava program.

That assignment came about soon after two more economists, Alberto Valdes from Chile and Grant Scobie from New Zealand, were hired. After a short period of having an economics program to which we all belonged, senior management decided that the program should be ended, and the economists allocated to the various commodity programs. Alberto was assigned to livestock and pastures (he had the best chance to get shit on his boots), Grant became the rice economist, and I was allocated to cassava and beans, where I did microeconomic analysis of cassava and bean production costs and related matters on the basis of data collected from farm and household surveys. Traveling with the survey teams as their supervisor gave me a great opportunity to get to know Colombia, particularly, the rural areas. Fortunately, it was a period of time when it was safe to travel throughout the country. La Violencia had recently ended, and the insecurity associated with production and trade of illicit drugs had not taken over.

CIAT leadership believed that the integration of economics into the commodity program activities would best be achieved by not having a separate economics program. At the time I thought it was a bad idea, because it would relegate each of us to becoming too focused on the individual commodity and lose the broader perspective needed to



help CIAT maintain research priorities based on solid evidence of what was actually happening among the population groups, that the research was supposed to help, including the millions of smallholder farmers who did not produce a single crop but a combination. In hindsight, it was probably not a bad move, particularly, if at least one of the economists would not be linked to a particular commodity and charged with broader economic analyses for the benefit of CIAT's overall priorities. An attempt was made to create a farming systems program, which unfortunately died a premature death. Since I was not part of that effort, I do not have a good explanation for why it failed.

Since nobody ever told me what to do while at CIAT, I could establish my own priorities and workplan. I decided that at this very early phase of CIAT's life, I could be most useful if I helped to set priorities for CIAT's work by undertaking ex ante assessments of potential payoff from various agricultural research priorities. An additional reason for emphasizing such work was that the research priorities in most of the developing countries that I was familiar with reflected what the researcher had done for his or her PhD dissertation at some American or European university, rather than what was needed by the country's farmers and consumers. Or worse, it was based on the arrogance that a person with a PhD could learn nothing from observing and talking with farmers about what they needed. Communication between agricultural researchers and farmers was a one-way street, if it existed at all.

I visualized the clients for my work being not only CIAT, but also national agricultural institutions. I collected data from farmers' fields about crop losses from various biotic and abiotic factors. Based on such data, interviews of farmers and discussions with the agricultural scientists about their subjective probabilities and time requirements associated with solving each of the problems identified, I applied econometrics and common sense to estimate which kind of agricultural research would be likely to result in the largest productivity gains or farmer income gains per research dollar spent.

At the time, some of the researchers and some of the leadership did not think my *ex ante* assessments were all that useful. As an example of the skepticism, one of the deputy directors questioned whether the work I did would give more reliable results than merely taking a drive and looking at the fields from the car.

Nevertheless, I continued the work, wrote several papers, mostly in Spanish, organized workshops, and gave oral presentations about the methodology and the importance for such analyses to guide agricultural research to help solve problems confronting smallholder farmers and low-income consumers. The work was done in collaboration with Colombian research assistants and the working language was Spanish. Most of the written output and oral presentations were also in Spanish. Virtually everything would fall into the category of "gray literature," and the distribution was limited. For example, results from research on factors limiting productivity in bean production

in Colombia was published by CIAT as a technical report in Spanish.

While the empirical content was of most relevance for Colombia, the methodology was innovative and useful to research institutions in other countries. A workshop on research allocation in applied agricultural research in Latin America included papers from various countries. The papers were published in both English and Spanish, as a technical report with—again—rather limited distribution. The response I received from this *ex ante* research allocation research varied from enthusiasm to rejection. It was premature and possibly perceived by agricultural researchers as being threatening to their independence. Fortunately, the perceived value of *ex ante* assessments to help set research priorities has grown significantly since then. I received a more positive response to my research and writing about various economic aspects of CIAT's commodities and technological change. I wrote most of that work in Spanish, including technical bulletins, papers for presentation, and articles related to cassava, beans, rice, pigs, pastures, and beef. Twenty of these are listed in Appendix 2.

After focusing a while on how agricultural research could best help farmers, I expanded my work to include nutritional objectives. The question was: how could you get the largest nutrition impact per research dollar spent? At the time, the nutrition impact was perceived to be a matter of calories and protein. Micronutrient deficiencies were barely mentioned in the applied literature, and the concern about overweight and obesity came much later. The term

“food security” was used to measure total food production and not household or individual access to food. That came later. So did a healthy diet as the relevant measure for food’s contribution to better nutrition.

My interest in better understanding how to guide agricultural research and government policy for better nutrition came partly from observing the massive nutritional problems when traveling and reading the Food and Agriculture Organization of the UN (FAO) statistics, and partly, from my observation that many proposals for economic support for agricultural research mentioned improved nutrition as one of the goals of the research but never explained how the research would, in fact, achieve such a goal. It appeared that the nutrition goal was included because it strengthened the justification for the application for research funds and not so much because the applicant really cared about improving nutrition. A more friendly interpretation might be that the writer of the proposal thought that the nutrition impact was obvious. If the research improved agricultural productivity, more food would be produced and consumed. Therefore, better nutrition. We knew then, and we certainly know now. that is a faulty conclusion.

Soon after I arrived to CIAT, a maize variety with high contents of lysine and tryptophan, two essential amino acids for humans in short supply in maize, called High Lysine Maize or Quality Protein Maize (QPM), developed at CIMMYT, was being promoted for production and consumption in Colombia to reduce protein deficiencies. Maize was a very important element of the Colombian diet. To facilitate its introduction and expansion, I did a

benefit–cost analysis. Contrary to my expectations, the analysis, which was based on survey data that my research assistants and I collected from farmers, traders, and consumers, showed with great clarity that it would never fly in Colombia. The producers would not grow it, because yields were too low, and losses to insects and rats would be high because the kernel was soft. The traders did not like it for the same reason. Losses in storage were too high. Consumers were used to a hard kernel maize. As part of the survey, they (the women, because they did the cooking) were given a 1-kg bag of the maize currently in the market and another with QPM and asked to cook with each one on two separate days. They were also told that the QPM was more nutritious and better for the kids. We then returned 3–4 days later and asked which they preferred. Virtually all of the women preferred what they were used to. They told us that they did not know how to cook the soft kernel. With a stronger nutrition education campaign, and information about how to prepare the soft-kernel maize, more women might have been willing to switch to QPM.

The results of the study were published in CIAT's first technical bulletin (remember: no journal articles) and presented at a conference in Bogota two days after the Colombian president had promoted QPM on national TV. Pretty poor timing on my part. The CIAT director, Dr. Grant got a call from the Colombian agricultural research institute (ICA), suggesting that he should consider sending me back to Denmark. My director defended me and responded that ICA was welcomed to review my study to identify any errors before he took action. If no errors were

found, I would continue to work for CIAT. No errors were found. I stayed at CIAT and, as I had predicted, QPM came to play virtually no role in the Colombian maize market. I continued to communicate the findings in papers and oral presentations, including a plenary presentation at the annual meeting of the American Society of Agronomy in Miami Beach in 1972. Just to be clear on my perception about causality: I am not saying that my work caused QPM to fail in Colombia, but only that the results from our research turned out to be correct.

I shall mention only one other nutrition-related study, because I believe it changed the direction of my career. It was an analysis of how various commodity priorities in agricultural research would affect human nutrition. The results were published in various places. An article in the *American Journal of Agricultural Economics* in 1976, written jointly with Nora de Londoño and Ed Hoover, turned out to be particularly important for a change in my professional career towards nutrition economics and policy. At the time, few if any other empirical analyses had been done about the links between agricultural research priorities and impact on human nutrition. Therefore, contrary to reality, I suddenly become viewed by those who read the article, as an expert on the subject.

The World Bank nutrition advisor, Alan Berg, was very interested in trying to use expected nutrition impact to help guide the design of World Bank projects. He invited me to spend some time with him to further develop the work I had done, and together, we prepared guidelines for use in project design. The director of the United States

Agency for International Development (USAID), Martin Forman, became interested and together, the three of us, in collaboration with the United Nation Sub-Committee of Nutrition (SCN) and the CGIAR centers, arranged a conference about international agricultural research and nutrition.

The papers prepared for—and presented—at the conference, which was held at the Livestock Center in Addis Ababa, was published as a book. It did not become a best seller, but it probably had some impact on the debate. I kept writing papers and giving presentations about the importance of including nutritional goals into the design of agricultural projects and research, but the work did not have any significant impact. It was premature. For reasons not entirely clear to me, the topic began to gain attention after the world food crisis in 2007–8. Since then, much has been done to refine the methods and to promote the use of nutritional impact as an important consideration in the design of agricultural projects and government policy. Much is now being said and written about how to change food systems to improve human health and nutrition. Whether it is actually resulting in appropriate action is, I believe, still an open question. I will return to that later in the book.

After about seven years at CIAT, I was beginning to consider my next professional move. Although I was happy at CIAT (and the indications were that the CIAT leadership was happy with my work), and Birgit and I were happy living in Cali, I felt that it was time to make a move if I wanted to keep at least some doors open for new

professional opportunities. While I thought my work at CIAT was useful, it was very applied and not very visible in the international debate about food policy. As I was busy in farmers' fields and wrote lots of gray literature, mostly in Spanish, my colleagues at US universities produced journal articles and moved up the academic scale. I did not really move professionally. At the same time, my work was not of the kind that could lead to an interesting position in a development organization, such as the World Bank or the United Nations Children's Fund (UNICEF). I felt it was time to move in one direction or another. I had never seen myself as an academic, but I wanted to be recognized for the economics research I did, even though it was very applied, frequently interdisciplinary, published in Spanish, and not publishable in the highly respected economics journals. On the other hand, the best way to help poor people in developing countries might be to forget about research, and instead, try to find a place where I could implement development projects—thoughts similar to those I had after Charlotte died (mentioned in the Prologue). But before I had taken action to pursue a different approach to be useful to the poor and malnourished, I was contacted by Dr. McCune, the director of the brand new International Fertilizer Development Center (IFDC), mentioned earlier.



## CHAPTER 5

### **A Brief Acquaintance with Fertilizers and Alabama (1976–1977)**

Dr. McCune was looking for a person who could help him create an Agro-Economic Division, a division for doing fertilizer-related applied research and development activities in social and soil sciences. Thanks to a recommendation by Professor Vernon Ruttan, University of Minnesota, McCune was interested in exploring whether I might be the person he could use. He apparently concluded in the affirmative, and since his offer came at a time I was thinking about leaving CIAT, I accepted. Birgit, Charlotte, Tina, and I moved to Florence, a town near Muscle Shoals, where IFDC was located. My job as director of the IFDC Agro-Economic Division began on February 1, 1976. It did not last as long as I had expected. On October 15, 1977, we were on the road again; this time to Denmark, where I had assured a position as Senior Research Fellow at the Royal Veterinary and Agricultural University, in the same department where I had done my undergraduate work. After a few months, an Associate Professor (*Lektor*) position became available for me.

Why so short at IFDC? Mostly because Dr. McCune and I did not agree on how to manage an international organization. I could not live with the consequences of developing and managing the Agro-Economic Division the way he wanted. So I decided to leave. No reason to bring up any of the details leading to the disagreement but merely say that I was disappointed, a sentiment I believe was

shared by Dr. McCune. With the benefit of hindsight, I still believe my decision was the right one, although there may have been a way to make it work. A way I still do not see.

So what did I do as Director of IFDC's Agro-Economic Division? Did I earn my keep? From the point of view of institutional development, I believe the answer is yes, in spite of the aforementioned disagreements. But I doubt that my work made any difference in the lives of the intended beneficiaries, that is, smallholder farmers in developing countries. Not enough time. But there was enough time to develop a research and development strategy for the Division and to hire scientific staff to further refine the strategy and begin to have it implemented. Even at that time, before I had very much management and leadership experience, I practiced what has been so important in my subsequent positions: hire the most qualified staff members you can attract for the particular jobs to be performed. Never worry about being upstaged by them, and never try to keep them down professionally or psychologically. Expect them to be better equipped than you to do the particular jobs for which they were hired. My job as manager and leader was to assist them to do the best they could. I firmly believe that staff with outstanding qualifications will almost always make the manager and leader look good, while at the same time get the job done. A true win-win. I was successful in hiring outstanding scientific staff in soil science, economics, and sociology, the three subject areas the Division was to cover. Unfortunately, I have observed managers who failed because they were afraid

to hire staff members they thought might threaten them professionally and intellectually.

Most of my work was of a management and leadership nature related to research in soil science, soil chemistry, agronomy, economics, and sociology. As time permitted, I wrote a few papers and gave oral presentations about fertilizer policy and its importance in developing countries' agricultural development and poverty alleviation. There is no indication of any significant impact of that work, although I hope it may have added something to improve the effectiveness of fertilizer use in developing countries.

## **CHAPTER 6**

### **Back to the College of My Undergraduate Studies (1977–1980)**

It is now the Fall of 1977, and I am back at the Royal Veterinary and Agricultural University (KVL) in Copenhagen as a Senior Research Fellow. On my way back from Alabama to Copenhagen, I stopped in Ithaca for a job interview at Cornell University, which the Director of the Nutrition Division, Professor Malden Nesheim had invited me to. It did not really make much sense, since I had already accepted the position at KVL, and our household goods had shipped to Denmark. I had told that to Professor Nesheim, but he suggested I accept his invitation anyway. The interview and seminar presentation went well. A few days after I arrived back to Denmark, I received a message from Professor Nesheim, with an offer to take the H. E. Babcock Endowed Chair. I responded that I appreciated the offer, but that the timing would not work for me. The H. E. Babcock Endowed Chair was a great professorship, and I really regretted not being able to accept it. What I did not tell Professor Nesheim was that I hoped the position might be available to me some time in the future, maybe after the completion of the two-year Senior Research Fellowship at KVL, if we decided to leave Denmark again. As I mentioned earlier, the Fellowship led to a tenured position as Associate Professor at KVL, a position I held until I accepted an offer to join IFPRI in the beginning of April 1980. As further discussed later, my hope to sit in the Babcock Chair materialized 20 years later, on January 31, 2003.

My main reason for applying for the Senior Research Fellowship at KVL was to have a couple of years to write full time, without any other professional commitments. There were a couple of other reasons. First, as mentioned previously, things did not work out well at IFDC, and I did not see any obvious alternatives at the time. Had the offer from Cornell arrived a few months earlier, we might have moved to Ithaca instead. Second, Birgit and I talked about whether we should try to live in Denmark after having been away for several years.

Since this book is limited to my professional activities, I will leave out—but recognize—the personal challenges associated with the move, for the whole family. Professionally, the Fellowship was exactly what I wanted to get some writing done. I wrote my first book and had it published in both Danish and English. It was about the role of agricultural research and technology in economic development, something I had done a lot of thinking about, but had not found time to write up. I also wrote seven articles and book chapters in Danish and eight in English, all about various aspects of the same topic. Some of this work was produced while I was a visiting scientist with the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. For reasons I cannot remember, I did some research on what I called, at that time, “energy cropping”—what we now call production of bio-fuel. The results were published in a journal article and a brief. It was premature and did not catch on. I wrote a book in Danish on the role of fertilizers in food production, which won a Prize Competition organized by the Nordic Society of Agricultural Researchers and Norsk

Hydro. I also wrote a couple of journal articles about income distribution. After I was promoted to Associate Professor (*Lektor*), I did some teaching as well. A very productive period for me.

Some of the work I had done earlier on the links between agriculture and agricultural research, on the one hand, and nutrition on the other, was published after I joined KVL. This work came to the attention of John Mellor, the Director of IFPRI at a time he was looking for scientific staff to work on consumption and nutrition economics and policy. He contacted me and invited me for a job interview in Washington, DC. I went, and a few days later, I received an offer to join IFPRI. The job sounded a lot more interesting than the one I had, and it fit exactly what I wanted to do. It was, of course, grossly unfair to the family to move back to the United States, after having recently settled in Denmark. But Birgit, Charlotte, and Tina agreed to the move, with all the associated challenges and opportunities (if any) for them, and I left KVL toward the end of March 1980, and joined IFPRI in the beginning of April.

## **CHAPTER 7**

### **Seven Years of Food Policy Research in Washington, DC (1980–1987)**

As a research associate in IFPRI's Food Consumption and Nutrition Division, I immediately entered into full-time applied research on food consumption and nutrition policy and economics. The economics of agricultural research and technology was now in the background or simply left behind, except when related to human nutrition. The Division Director left IFPRI in August, or about four months after I arrived, and I was promoted to replace him, a position I kept until I left IFPRI for Cornell at the end of January 1987. IFPRI's director, John Mellor delegated significant authority to division directors, and my job was a combination of administrative and research activities. I enjoyed both, but I was most proud of my success in attracting outstanding scientists to the Division as more funding became available. Not only did these colleagues make a very significant contribution to the Division's research and its impact on intended beneficiaries—low-income, malnourished people. They also strengthened IFPRI and its reputation.

From a purely selfish perspective, they made me look good as a mid-level manager and leader, and since my own research was done in collaboration with them, it became better. A multiple-win. My experience confirmed what I mentioned in an earlier chapter: hire the most qualified people you can find, give them the support they need and the recognition they deserve, and get out of the way.

No, they will not detract from your reputation as a manager or leader. They add. The amount of total recognition does not conform to a zero-sum game! Over the years, I have seen managers and leaders fail because they were afraid to hire staff they perceived to be more qualified or more intelligent or more articulate than they were. They see themselves in competition with their staff for recognition and they apply Jante's Law to keep them down. It is a prescription for disaster. I am not arguing I am a good manager or leader. I leave that judgment to others. But I am saying that I have learned some very important lessons that worked for me as Division Director and, as I will turn to later, as Director General.

Now to my research during this, my first job at IFPRI (as discussed in Chapter 9, I returned later as Director General). I continued my research and communication about how to design food systems for the benefit of household food security and nutrition. I focused on several policy issues, with initial emphasis on generating a better understanding of how consumer-oriented food subsidies in several countries benefitted food security and the nutrition of the poor, and the cost-effectiveness of various policy and project designs. The activities on this topic included a set of country case studies and a variety of papers, book chapters, oral presentations, and a book which, together with a rather large conference in Chang Mai, Thailand, communicated both results from individual country case studies and cross-country syntheses. The country case studies were designed to permit syntheses that would generate the international public goods which, as publicly funded international entities, IFPRI and the other research



centers in CGIAR were supposed to produce. Merely undertaking case studies, without the guidance of a framework to assure reliable syntheses, would be no different from being a consulting firm and should not be done by international research centers. Unfortunately, that point is frequently ignored by donor institutions, and much of the activity undertaken by CGIAR centers has become nothing but consulting jobs for donors, rather than research to produce international public goods of benefit beyond the particular country case study. I will return to that when discussing my role as chair of the CGIAR Science Council.

Research and communication activities about how macro-economic adjustment policies (primarily what was called the “Washington Consensus”), promoted by the World Bank, the International Monetary Fund, and bilateral development agencies, affected household food security and nutrition became another major focus area. Much of that work was done in collaboration with UNICEF, as part of the project called “Adjustment with a Human Face,” under the leadership of Richard Jolly. The work is best described as translational research or evidence-based advocacy. Our analyses showed, with considerable certainty, that the implementation of the Washington Consensus policies had very serious negative effects on the well-being of poor people. I believe the findings and recommendations for alternative policies, as communicated by Richard Jolly through UNICEF, had significant effects on how the policies were changed.

The nutrition effects of cash and export crop production was a third priority area for my research. On the basis of a number of country case studies undertaken in collaboration with IFPRI colleagues and researchers in the case study countries, conclusions and generalized lessons (international public goods) were prepared, and policy recommendations made and communicated in papers, books, and oral presentations by several of us in the Division.

We all did a tremendous amount of traveling to manage research projects in collaboration with study country researchers and government officials, and to communicate research results and recommend policies and policy changes. A large number of papers, articles, and oral presentations about various aspects of food security, nutrition policy, and economics were written, and I was a co-author with Margaret Biswas for a book on nutrition and development. Appendix 2 shows only those works I was the author of. The large number of written works authored by Division staff and collaborators are not shown.

In my judgment, it was a very productive period during which I was part of an effort by all Division staff to very significantly expand the knowledge about how government policies could best be designed and implemented to enhance household food security and improve nutrition among low-income people in developing countries. As I came closer to seven years in the position, I thought it might be useful for IFPRI if I were to vacate the position for somebody with new innovative ideas. A new position might also be good for my professional development.

Some concerns that had developed in the Institute about top-level institute management added to my decision to seek another job. As this was going on in my mind, I got a phone call from Jean-Pierre Habicht at Cornell's Division of Nutritional Sciences that the Division was looking for somebody who would run the Cornell Nutrition Surveillance Program. Chapter 8 picks up from there.

## **CHAPTER 8**

### **Founding a Food and Nutrition Policy Program at Cornell (1987–1992)**

Although Cornell sounded enticing, the job to run the Surveillance Program did not, primarily because it was based exclusively on short-term project funds from USAID, which might end at any time. The prospect of moving to Ithaca and maybe having to leave again within a relatively short time, because the funding would run out, was really not what I wanted to do. The substance—nutrition surveillance—was fine. I was not an expert on the subject, but I was ready to learn. I received great understanding for my hesitancy to accept the job, and it was agreed that I would come to Cornell for a job interview and discussions about how best to proceed. In my total lack of modesty, I was looking for a professorship with tenure, which would include, but not be limited to the nutrition surveillance program, but the Division claimed not to have a line for such a position. Fortunately, Cornell University is known for its ability to innovate, and the Division came through with an arrangement that would permit the creation of such a line for which I could be considered. The line would be temporary and “bridged” to the H. E. Babcock Chair (which, as mentioned previously, I had been considered for before), so that the line would exist only until the Babcock Chair became vacant. I would then become Babcock Professor, and the line would disappear.

I was considered and found qualified. My work as Professor of Food Economics in the Division began in

February 1987, a position I held until June 1992. I also took on the leadership of the Cornell University Nutritional Surveillance.

I proceeded on a steep learning curve to learn about nutritional surveillance. Fortunately, Jean-Pierre Habicht, David Pelletier, Victoria Quinn, and others were good teachers. As I began to develop my work plan, I was concerned about the heavy dependence on one donor (USAID). I also wanted to expand the work beyond surveillance. So I developed a strategic plan and began efforts to expand the program and find additional donors. These efforts resulted in the creation of the Cornell Food and Nutrition Policy Program (CFNPP) in 1988 to undertake research, training, and technical assistance in food and nutrition policy, with a large increase in financial support from multiple donors, including USAID, UNICEF, the Pew Memorial Trust, Rockefeller Foundation, the World Bank, and the government of Indonesia. Obviously, the surveillance activities became part of CFNPP.

To strengthen CFNPP's legitimacy, I enticed faculty members from the Division of Nutritional Sciences, the departments of Agricultural Economics, Rural Development and Government, and the Program of International Agriculture to serve as members of an internal advisory committee. In addition to articles and oral presentations, CFNPP's work was disseminated through a series of monographs. I was personally involved in writing two of these. One was on macroeconomic policy and nutrition, basically following up on the Washington Consensus work. The other was on Nutritional Surveillance. As more

funding became available. and the number and size of the projects expanded, more scientific and support staff was needed. My initial idea was that most of the research, training, and advice that we promised the donors would be done by existing faculty, graduate students, and staff at Cornell, with, of course, funding from CFNPP. I very quickly realized that neither the faculty nor staff were underemployed. Yes, graduate students might be available and interested, but I needed to hire CFNPP's own scientific staff. In all fairness, while faculty members did not have much time to undertake CFNPP activities, they were very willing to assist in the development of the Program through participation in advisory activities and the like.

As I began to hire scientific staff for the CFNPP, four challenges emerged. First, such staff could not be hired as faculty members, and they could be hired only on fixed-term contracts. They could get the title of Research Associate, none other. Second, we very quickly running out of office space. Third, all funds coming to CFNPP had to include full overhead charges, all captured by the University. I forget the exact rate, but I believe it was 60–70 percent of direct costs. Nothing came back to CFNPP to cover its actual overhead costs. It made fundraising very difficult. Fourth, as CFNPP grew, the dependence solely on project funds to meet the payroll of an increasing number of staff members (we were 32, when we were largest), became a source of sleepless nights.

That was the uncertainty we had to live with, and we did. Fortunately, it all worked out without missing any monetary obligations and with a large amount of food and

nutrition policy research completed. We had to live with the one title available to the scientific staff, the high overhead rate, and go elsewhere to find funds to pay for office space. We rented space in Washington, DC, for CFNPP staff who worked on projects, mostly covered by funds from USAID. Fortunately, David Sahn, a senior research associate at IFPRI agreed to move to CFNPP and take over the leadership of the work done in the Washington office. Under his leadership, the office was managed efficiently, and he and his staff completed a large amount of excellent research output that did not only satisfy the donors but added significantly to the existing knowledge about food and nutrition policy. Upon my departure from Cornell to take over the position as Director General of IFPRI, David accepted a tenured professorship at Cornell, moved to Ithaca, and took over the leadership of CFNPP.

In addition to the large amount of work done in the Washington, DC, office under the leadership of David Sahn, the nutrition surveillance work was expanded with CFNPP staff, including David Pelletier, Victoria Quinn, and Suresh Babu, outposted to several African countries. I developed and taught a course on food policy and continued past work on how macroeconomic and sectoral adjustments in various developing countries affected food security and nutrition and what could be done to reduce negative effects and promote positive ones. I also worked on various household food security issues, including a rather large project on food acquisition behavior of rural and urban household in China.

A very large amount of food consumption data had been collected by the Chinese State Statistical Bureau (SSB), but virtually no analysis had been done. At the time, data collected by government agencies were considered confidential, and I was very fortunate to get access to the food consumption data. I worked with a team of Chinese colleagues from the SSB through periodic visits to China. This was my first opportunity to visit the country, and I was again on a very steep learning curve—this time to gain knowledge about Chinese social and economic issues. Every time I went to China, my SSB colleagues took me on a 3–4 day trip to a part of the country of my choice. Only once was my suggestion not met. That was when I wanted to go to Tibet. At the time, that was not a good idea. I have been to China many times since, and I always leave with an upbeat sense that development works, even for the poor.

A list of my writings from this time period is shown in Appendix 2. Some of these were published after I left Cornell, including a book I edited with David Pelletier and Harold Alderman on *Child Growth and Nutrition in Developing Countries: Priorities for Action*, published by Cornell University Press, 1995, and republished by Oxford University Press for India in 1997.

I did a few consulting jobs during this period. One of these was a desk study for the Danish International Development Agency (DANIDA). The purpose was to undertake an independent assessment of Danish food aid to the World Food Programme (WFP) to be used in DANIDA's reassessments about the quantity and type of future food



aid. I found that a straightforward change of the composition of the food aid could increase the amount of dietary energy (calories) shipped as food aid sevenfold without increasing the cost. Within weeks, DANIDA changed the composition. A follow-up study done by Bjørg Colding and me 10 years later confirmed that the composition I suggested was still being followed and seven times more calories had been donated every year. The study was published in a Danish journal to illustrate how results from applied economics analyses can result in policy change within a very short time span. Although this was a very small study, I will never forget it, because it was one of the few pieces of research I did that had an immediate and easily verifiable impact.

Things were going well at Cornell. I enjoyed my research and teaching, and CFNPP was thriving. As a member of the Graduate Fields of nutrition and agricultural economics, I could advise graduate students in those fields, something I enjoyed and benefitted from. My teaching was going well, and I had good collaboration with many faculty members, both within and outside the Nutrition Division and the Agricultural Economics Department. Erik Thorbecke still held the Babcock chair, and the temporary line I held was solid. Birgit was getting ready to move to Ithaca, after our almost five years of commuting.

Suddenly, a piece of news came into this harmonious situation. The position as Director General of IFPRI had become vacant, and I received a letter from Professor Vernon Ruttan, who as chair of the Search Committee, stated that I had been nominated for the position. If

interested, I should apply. I thought about it. Why would I leave a tenured professorship at one of the world's best nutrition department in one of the world's best universities? I had everything going for me! Great students and colleagues, exciting work with opportunities for improving the lives of less fortunate people in developing countries, and of course, a good job with lifetime tenure. Was that not what I had always wanted, but never expected to achieve?

Only an irrational person would leave such a position voluntarily. I applied anyway. Was I irrational? Maybe not. To a food policy wonk, there are few positions more interesting than the head of IFPRI. It is also one of the organizations with the greatest opportunity to influence policymaking for the benefit of improved food security and nutrition. If you believe that good policy decisions are made on the basis of solid empirical evidence, the evidence has to be created and disseminated to decision-makers. That is what IFPRI was all about.

The application process proceeded with letters of recommendation, interviews, a seminar presentation to the IFPRI staff, and finally, a dinner with the IFPRI Board. Everything went well, I thought, including the dinner. We were three candidates on the short list, and we were all invited to the same dinner to sit around the same dinner table with the Board members. We all knew each other well and had worked together in the past. One of the other two may have thought it was too weird to be together at what was effectively a job interview dinner. But for whatever reason, he pulled his application before the dinner.

The two of us candidates still in play were seated at each end of the table. Both the dinner and the follow-on standing coffee session went well. The Board spent several hours the next morning trying to agree on which of the two of us should be offered the job. Rumors have it that the discussion became heated, with strong disagreements about which of us would be the best DG for IFPRI. While this was going on, we were sitting in our rooms at different hotels in Washington, DC. We were long-standing friends and colleagues, so we called each other periodically to ask whether the other had heard anything. The other candidate was and is an outstanding individual, strongly qualified for the job, whom I respect greatly, and I expected he would win our little competition. Finally, the call came, and the suspense dissipated.

The call was from the board chair, the Canadian economist Gerry Helleiner. He offered me the job and said I had to respond immediately, because he had to get back to the board meeting with an answer. I thought it would be useful to discuss a few details about the offer, such as the salary level. His response was that we could work that out later. At this point, he just needed a yes or no. I knew Gerry and had full confidence in his integrity. I also wanted the job, so I said yes without further ado. Later in the day, we met and agreed on the salary and a few other conditions. I had excellent working relationships with the board throughout the 10 years.

## CHAPTER 9

### Leading a World-Renowned Policy Research Institute (1992–2003)

I became Director General and CEO of IFPRI on July 1, 1992.<sup>1</sup> The contract was for five years, renewable once for up to another five years. I overstepped the 10-year maximum by 2 months, leaving August 30, 2002. The Board granted me four months of stay as Senior Research Fellow to tie up various loose ends and prepare for the next job.<sup>2</sup> Thus, I left IFPRI at the end of 2002. A year or two earlier, Erik Thorbecke had retired from the Babcock chair. Had I stayed at Cornell, I would automatically have moved from my temporary line to the Chair, because of the aforementioned bridge, and when I left, I assumed I had given up any opportunity to ever occupy the Chair that had been offered to me back in 1977, and used to facilitate my coming to Cornell in 1987. Now I had another chance to get it because, although the timing was a bit off, it turned out that Cornell was willing to wait for me to finish at IFPRI, and I was offered the position. This time I accepted the

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<sup>1</sup> I followed Dale Hathaway (Founding director 1975–77); John Mellor (1977–90) and Just Faaland (Interim director 1990–92). I was followed by Joachim von Braun (2002–09); Shenggen Fan (2009–20); and Johan Swinnen (2020–present).

<sup>2</sup> A description of IFPRI's work and accomplishments is beyond the scope of this book and may be found in a large number of reports and publications, including *25 Years of Food Policy Research, Reflections by Per Pinstrup-Andersen*, published by IFPRI.

offer with enthusiasm. Instead of following my plan to retire after leaving IFPRI, I accepted the offer and returned to Cornell. More on that in Chapter 10.

Back to the beginning of my DG job. I came to IFPRI determined to develop a participatory leadership structure, so one of the first things I did was to call a meeting of the division directors to discuss the creation of a Senior Management Team (SMT) and its nature and mode of operation. We agreed that the Team would consist of the division directors and me as chair. It would meet periodically, initially weekly, to discuss and decide on major issues related to IFPRI's management, leadership, research priorities, budget allocations, and other issues of significant importance for the Institute. Division-specific decisions were delegated to division directors, all of whom were highly qualified for their jobs. The Board response was interesting and maybe should have been expected, but I did not expect this: "We (the Board) hold you responsible for what happens at IFPRI, not some SMT you created." I returned to the SMT and stated that the SMT would continue to make decisions, but that I had veto power, because I had to face the music. The working relationship in the SMT was excellent throughout the 10 years. I was solely responsible to the Board, but I never used the veto power.

My next major priority, was to work with division directors and staff to develop priorities for IFPRI's research, communication, and other activities. It became clear early on that IFPRI was very strong on food policy research and dissemination of results to the research

community, as exemplified by 100 research reports, each of around 100 pages, and many articles in refereed journals, all written by IFPRI staff and collaborators. Efforts to communicate with others outside the food policy and economics research community, including policymakers, policy advisors, the news media, and others who could take action on the basis of IFPRI's research results, however, was not emphasized. I felt strongly that IFPRI's principal role was to strengthen food policy decision-making by making relevant evidence available in a form that decision-makers could use—obviously, with the final goal of improving food security and nutrition in the most cost-effective and environmentally friendly manner.

Two decisions, the creation of a communication division and the 2020 Vision Initiative, brought IFPRI from its position as an excellent, but backroom, food policy research institute to an organization highly respected and listened to in food policy circles for its contributions to the policy debate, both national and international. I am not going to describe the communications activities pursued, but merely emphasize two things. First, I was extremely fortunate to attract an outstanding communications expert, Klaus von Grebmer, to lead the new division. Not only did he develop an excellent communication program for the benefit of the whole Institute and intended beneficiaries, but he also strengthened my skills and those of other IFPRI staff to communicate on behalf of IFPRI. Second, under his leadership, IFPRI expanded the number of intended users of our output from the academic community to a much broader audience of policymakers, policy advisors, the news media, and many other groups.

To meet the needs of these new audiences, we severely reduced the number of research reports written and focused on more digestible written and oral outputs, such as policy briefs and a much closer interaction with the news media.

Simultaneously with these activities, I proceeded with the creation of a staff assessment process. As it was applied, a few staff members left and others were let go. I also focused on enhancing fundraising. Division directors, notably Peter Hazell and Lawrence Haddad, and many other staff members spent a lot of time writing proposals, which reflected the priorities we had agreed upon, and I spent much time traveling to meet potential donors around the world. It paid off, the budget increased, more priority work could be done, and the reserve fund increased from virtually zero, when I joined, to the level specified by CGIAR.

As mentioned before, I shall not attempt to describe IFPRI's activities during the 10 years I was DG but merely state that I did my best to facilitate the work by my colleagues and collaborators. I provided overall leadership and management while spending a large amount of time fundraising, representing and promoting IFPRI and its work internationally, and interacting with decision-makers relevant for food policy for developing countries. I used the privileges associated with my title as DG of an increasingly important player (IFPRI) in the international debate to get access to high-level policymakers and communicate evidence from IFPRI's work that was timely and relevant to the particular policymakers. Because of my

title, I could open doors for my colleagues for them to strengthen the impact of their work. I also spent a lot of time giving oral presentations about a variety of food policy issues, many of which disseminated results from IFPRI research. Some of the presentations were supported by written papers while others were based solely on PowerPoint presentations. The written papers are listed in Appendix 2. In these efforts, I accumulated many frequent traveler airline points, became familiar with many time zones, and visited more than 140 countries, some several times.

A few more words about my effectiveness as DG or lack thereof. All throughout my professional life, I have been confronted with challenges and expectations that required new learning. The learning curve was frequently steep. As I mentioned in the introduction to this book, I have benefitted tremendously from mentors, colleagues, and others who provided support and assistance in so many different ways. As a new DG, I had to strengthen my leadership, management, and communications skills. I had to learn not just to be efficient but to prioritize; to learn what I should do and what could be delegated. I was aware of leaders who failed, because they took on too much, failed to delegate, and wore themselves out. Fortunately, the CGIAR system offered three one-week leadership courses and various management training activities, which turned out to be very helpful. Similarly, several activities organized by IFPRI significantly strengthened my presentations and my interaction with the news media.



IFPRI was—and is—an applied food policy research entity to help achieve food security and access to a healthy diets for all in a manner that would assure sustainable management of natural resources. The value of the research should be measured in terms of its impact and to achieve impact, the research results had to be disseminated in a manner conducive to application. Could I measure the impact of my own activities, including all the dissemination efforts around the world? No, I could not. What I did should be seen as a component of the overall IFPRI work. So a better question would be whether the impact of IFPRI's overall work could be measured. No, but we did measure the impact of a number of specific research and advisory projects. The results were generally excellent. Reports of these impact assessments are available from IFPRI. As with much other applied research, the economic contribution of one very successful project could easily pay for a large research effort. You only had to hit the jackpot once in a while to cover the cost of all IFPRI's work many times over. In fact, that is the nature of research. Our assessments showed very large economic and welfare gains from some research efforts and little or no impact of others.

I now turn to a few specific subjects that I focused on as part of my job as DG.

### *The 2020 Vision Initiative*

As part of the effort to bring IFPRI squarely into the international food policy debate and assist decision-makers in the use of reliable evidence in their food policy design and implementation, I took personal leadership of

the creation and implementation of the 2020 Vision Initiative, later to be taken over by Rajul Pandya-Lorch, who took it to new heights before the Initiative died a natural death, just before reaching the year 2020. The purpose of the 2020 Vision Initiative was to enhance IFPRI's impact on sustainable food security, to improved nutrition, and to promote sustainable management of natural resources, through repackaging and dissemination of evidence needed to inform food policy.

On the basis of results from IFPRI's research and evidence from other sources, the 2020 Vision Initiative organized conferences, provided advice, produced policy briefs of various kinds, interacted with the news media, and was an active participant in national and international conferences and meetings related to IFPRI's mandate. The Initiative did not have its own full-time scientific staff but drew on staff in the various divisions. This way, the 2020 Vision Initiative was an integral part of the overall IFPRI work and not a separate entity.

### *Biotechnology for developing country agriculture*

At the time I joined IFPRI, the debate about whether to use transgenic research methods in agriculture (referred to as "biotechnology" or "genetic engineering"), which would produce genetically modified organisms (GMOs) was heating up. The large, private agribusiness corporation Monsanto had developed crop varieties with built-in resistance to certain insects and herbicides. Potential economic gains to farmers were large, and risks of losing crops were reduced. Also, the herbicide was less dangerous to humans than what was traditionally used, and it

replaced labor in weeding, an important gain, particularly, for rural women, in many developing countries. Crop resistance to certain insects reduced the need to apply chemical pesticides and reduced the risk of crop losses. Yet, in spite of these large potential gains, strong resistance developed to the use of transgenic, or GM seed. The resistance originated with a few large transnational advocacy groups, notably Green Peace and Friends of the Earth, and spread rapidly, particularly, among smaller nongovernmental agencies (NGOs) and consumers in high-income countries, who did not perceive any benefits from the GMOs, so why take any of the risks that the advocacy groups claimed might exist.

Actually, the advocacy groups did not document any negative effects but merely played on fears that not enough was known about the GMOs and that it was better to stay away from them. In any case, high-income country consumers were not short of food, and they did not participate in manual weeding. I felt that modern science, including transgenic research methods and other biotechnology, offered tremendous opportunities to improve food security among smallholder farm families in developing countries, and I saw an important role for IFPRI to counter the unsubstantiated opposition with the best evidence available. I was worried that the opposition generated in high-income countries would spill over to developing countries, where I felt GMOs could be very beneficial for the poor and their food security. As the advocacy groups gained foothold among high-income country consumers and policymakers, particularly, European ones paid attention and introduced policy measures to either prohibit the

planting of GMO seed or made it very difficult to get permission. This spilled over to development assistance and advice to developing country governments.

My first move to try to enhance the acceptance of GMOs for the benefits of food insecure people in developing countries was to approach Ebbe Schiøeler to suggest that we write a book together, with the best available evidence about the use of GMOs in developing country agriculture. He agreed. The book was written in Danish and subsequently lightly revised, translated, and published in several other languages, including English (initially published by Johns Hopkins University Press and subsequently by Oxford University Press, India), German, Chinese, and Japanese. At the time, a somewhat emotional debate on the subject of GMOs for agriculture was ongoing in Denmark, and I expected to be beaten up badly by the news media. That did not happen. The book received very constructive reviews by all the major newspapers in the country. I believe the reason was that we emphasized that the book was about developing countries and that we did not write about the use of GMO crops in Denmark! After the book was published, I wrote a large number of papers, book chapters, and articles, and gave interviews and oral presentations throughout the world. Heated debates were not uncommon. In addition to sharing existing evidence about benefits and costs of GMO crops, I emphasized the risk of the adverse European attitudes spilling over to developing countries, with adverse policies and foregone opportunities to improve food security through higher crop yields and farm incomes, lower food prices and risks, and reduced hard work in weeding.

Unfortunately, the negative spillover from the European debate and advocacy, based on unsubstantiated claims of negative effects, did occur, and even though very large economic gains were made by farmers who did adopt GMOs, including millions of smallholders producing cotton in China, India, and elsewhere, many developing country governments replicated the European policies against GMOs in agriculture, and millions of poor people, who could have benefitted, did not. To this day, the European governments have not changed their opposition, even though virtually every reputable entity relevant to the subject, including the Danish Ethics Society and all reputable scientific entities around the world, have come out in favor of the promotion of genetic modification in agriculture. Even the most recent scientific approaches, which are based on gene editing (CRISPR) within a species rather than transfer of genes from one species to another, are opposed by the advocacy groups. So is the use of biotechnology to improve the nutritional value of specific foods.

Even though two of the main arguments used by the advocacy groups—the unknown danger associated with transgenic approaches and the lack of nutritional benefits—were no longer valid, the opposition remains. A third argument, that scientists should not do what God (or nature itself) could not do, is no longer valid. Gene editing is done regularly by nature. A fourth reason that is also no longer valid is that Monsanto and other large agribusiness companies take intellectual property rights to all the GMO seeds and earn monopoly profits. That argument made sense only in the beginning when almost all the research

using transgenic tools was done by the private sector. This is no longer the case. Universities and other public sector research entities are heavily involved in such research. It is also a puzzle why the recent focus on action to assure sustainability in natural resource management and dealing with climate change completely ignores opportunities associated with the amplification of modern science, including gene editing for agriculture.

What remains in the opposition's toolbox is its ability to spread misinformation that GMOs are dangerous and should be avoided. Would it be unfair to conclude that some groups have used—and still use—opposition to GMOs for agriculture as a fundraising tool? Give me money and I will continue to protect you from the perceived but illusory dangers. It is interesting that few attempts have been made to prohibit the use of genetic engineering in pharmaceutical research, even though a string of warnings about risks is shown on the package of almost every medicine available. Maybe the reason is that Europeans get sick and need cures but usually do not suffer from lack of food. Poor Africans both get sick and suffer from lack of food. They would benefit from better access to both medical care and a healthy diet, for which modern science is needed.

### *Political economy*

Soon after I joined IFPRI, I began to wonder about the concern expressed by many policy analysts that policymakers do not accept their recommendations. Instead of joining the chorus of neoclassical economists that conclude that policymakers are not interested in making

decisions on the basis of evidence or that they are irrational or not very bright, I joined those who believe that policymakers are rational and combine the evidence we provide with many other considerations in making decisions. I also believed that we, as policy analysts, fail to understand the policy processes. Having taken that position, which I shall call the political economy position, I wanted to better understand the decision-making processes and how we, as policy analysts, could take into account these other considerations to make our analyses and advice more relevant. What, if any, would be the lessons for IFPRI's future research?

What better way to proceed than to ask the people who knew something about it? So, I invited a group of experts from various political economy perspectives to prepare papers for presentation and discussion at an IFPRI workshop. The workshop moved me up the learning curve. In addition to organizing the workshop, my contribution was a paper about how best to take into account household behavior in the design and implementation of transfer programs. Why were household responses often different from those expected by government agencies? Was this a conflict between how governments wanted households to behave and how perfectly rational households actually behaved? Or were households just irrational? In other words, was the problem similar to that found when governments did not accept recommendations by policy analysts? My hypothesis and the analysis were based on whatever evidence I could mobilize, including my experience from actual transfer programs. After the workshop, I wrote a synthesis of the papers and edited a book with the

papers presented (*The Political Economy of Food and Nutrition Policies*). To further disseminate the results from the workshop, I wrote a couple of chapters for another book, I edited with David Pelletier and Harold Alderman (*Child Growth and Nutrition in Developing Countries*).

By the time the workshop had finished, I was convinced that political economy thinking and analysis should play a bigger role in IFPRI's work. Unfortunately, I did not take the necessary action to make it happen. My excuse is that I did not find much support for the idea among the division directors, and since much authority over the research activities were delegated to them, no real follow-up to the workshop took place, except for the book I edited. This is, of course, a lousy excuse. I had the authority and the means to assure appropriate follow-up and I did not. The current IFPRI DG, who was recently hired, is one of the world's foremost political economy experts, so I am sure political economy will gain the priority it deserves within IFPRI's portfolio.

### *Lots of papers and presentations*

In addition to the work described previously, I traveled around the globe to give oral presentations about a large number of food policy issues, some of which are mentioned here. I participated in workshops, panels, and conferences, and met with policymakers, policy analysts, and collaborators. Many of my presentations were supported by papers, which frequently were written jointly with some of my colleagues. I want to mention two such colleagues, who were excellent writers and particularly



helpful in developing the papers and PowerPoint presentations. I am referring to Mark Cohen and Rajul Pandya-Lorch. They are shown as co-authors of some of the papers, but they helped with many others.

I spent much time visiting and interacting with intended beneficiaries of IFPRI's work, that is, low-income people, particularly, poor rural households. Most of my visits were to locations where IFPRI projects took place. I did that not because I brought instant solutions to their problems, but to better understand their challenges and potential solutions. In particular: What could IFPRI do to make their lives better and did IFPRI projects make a difference? These interactions with poor rural and urban households served me as reality checks and motivating factors. The starving child, the unhealthy adult, and the mistreated natural resources that I observed on these trips had a severe emotional effect on me. Yes, their suffering was why IFPRI existed. But the pathway from the research result to the impact could be very long and easily derailed. Keeping the intended beneficiaries clearly in mind when prioritizing, undertaking, and disseminating policy research was key to desired impact.

During my 10 years as DG of IFPRI, I gave presentations in more than 120 countries, mostly developing countries, crossed either the Atlantic or the Pacific 16–18 times a year and was probably away from Washington, DC about one-third of the time. Why did I do that? The main reason was to disseminate evidence from IFPRI's research and other sources that could help improve food policy in both developing and developed countries. Most of the papers

and presentations were really communications efforts, rather than research papers. Did I spend too much time away from headquarters? I do not know. A high degree of delegation to very capable division directors, combined with my very long working hours when I was at headquarters, and much work done on airplanes, was key to maintaining a well-functioning research program in my absence, and I believe the balance between my international communications activities and headquarters activities was about right. But who knows? At the insistence of the Board of Trustees, I created a position for a deputy director and hired a qualified individual. It turned out to be a short-lived experiment. Such a position was simply not needed within the institutional setup we had, and neither the SMT nor I believed an institutional change would be constructive. That conclusion was accepted by the Board.

A secondary but important reason for doing all the travel was to promote IFPRI as a major player in the international and national debate and decision-making on food policy. As I mentioned in the beginning of this chapter, the creation of a communications division and the 2020 Initiative were deliberate attempts to bring IFPRI into play with its big brothers, the UN organizations and others, and to generate demand by national and international decision-makers for IFPRI's support in the design and implementation of food policy. That would require the promotion of IFPRI and what it could offer. No hype, but no hiding its qualifications either. Jante's law would not be applied.

The response to these attempts varied among the various international organizations. The other CGIAR centers were very positive to this expanded and more visible role of IFPRI, and collaboration flourished. An annual report about the world food situation with emphasis on aspects of particular importance for international agricultural research presented at the annual “Centers Week” was particularly welcomed by the Centers. The World Bank welcomed IFPRI as an important player and offered many opportunities for collaboration, a collaboration that significantly enhanced IFPRI’s impact. Most of the other international organizations relevant for IFPRI’s mandate, such as UNICEF and WFP, were very positive toward IFPRI’s greater presence in the debate, and more collaboration occurred. FAO was less happy, as IFPRI became more visible internationally. I sensed a bit of turf protection. While FAO and IFPRI staff collaborated successfully, FAO’s top management gave the impression that IFPRI was viewed as an unwelcomed competitor that failed to keep its place. After a couple of years of rocky interaction, things quieted down, and the two organizations became happy collaborators, also at the top management level. A number of interactions were strengthened at the national level. In the United States, I was invited to participate in several activities of the National Academy, and I presented at hearings in the US Congress, both the House of Representatives and the Senate.

Maybe it is a mistake to admit it, because Jante’s Law still applies, but I had a third reason for giving so many presentations and participating in so many activities in so many places: to promote myself as somebody who could be

relied on as a source of solid evidence on food policy issues. In fact, I encouraged my colleagues at IFPRI to apply the same three-step intermediate goal: disseminate evidence, promote IFPRI, and promote your professional self, in descending order of priority—without, of course, forgetting the ultimate goals of improving the lives of the less privileged in a sustainable manner. I wanted our potential clients to trust IFPRI, its output, and its staff and leadership.

### *Illustrations of presentation topics*

I do not have a count of how many oral presentations I gave during my 10 years as DG, but based on old to-do lists and travel plans, my guess is around 15 per month on average. A large share of them dealt with aspects of the global and regional food situations. These presentations, which mostly included both the current and expected future situation, were updated and expanded as more evidence became available. The projections undertaken by Mark Rosegrant were particularly useful and complemented by work by FAO, UNICEF, the World Bank and other sources. Soon after I was appointed as DG, but before I joined, I began working on collecting information about whatever aspects of the global, regional, and national food situation I could think of, so I could hit the ground running. I wanted to be able to answer as many questions as possible about this, to show that the IFPRI DG was well informed! Of course, this preparatory work was vastly strengthened and frequently updated after I joined IFPRI, and I could draw on the large amount of

evidence from IFPRI's work and the expertise of IFPRI staff.

As illustrated by the list of papers shown in Appendix 2, I wrote and presented papers on many different food policy related topics, including the following:<sup>3</sup>

- The global food situation. I do not know how many times I accepted invitations to speak about some aspects of the global and regional food, agriculture, and nutrition situation at meetings, conferences, and on radio and television, but quite a few. I want to mention one that I was particularly glad I had the opportunity to do. Once a year, Danish Radio selects a person to receive the Rosenkjær Prize for Policy Communication. I was nominated by Ebbe Schiøler in 2002 and won. In addition to the actual recognition related to exceptional policy communication, the Prize involved 5–6 paid one-hour lectures on national radio. A fantastic opportunity to share knowledge about food policy issues for developing countries, particularly, because they were rebroadcast several times over the year. I wrote six papers, each designed for a one-hour radio presentation. After I had completed the presentations, I was wondering whether I could use the written versions for something else. After all, I had spent a lot of time writing them. By pure coincidence I happened to mention this to Kirsten M. Andersen, who was

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<sup>3</sup> The large number of PowerPoint presentations are not listed in the appendix.

affiliated with the Danish publishing house, Anis, and she asked to see the material. I suggested updating the six manuscripts and writing a seventh on Ethics. Anis accepted the material and published a seven-chapter book with the title, *Fattigdom og Sult (Poverty and Hunger) 2006*. I do not know how many copies were sold, but it did not become a bestseller.

- Nutrition economics and policy. In 1992, when I joined IFPRI as DG, I subscribed to the general feeling, which was also the going position at IFPRI, that calorie and protein deficiencies were the key nutrition-related food policy problem for a large number of particularly poor people. However, I had not stayed long before hearing the loud voices from nutritionists that micronutrient deficiencies, with very serious negative health effects, affected many more people. It took longer to kill the notion that overweight and obesity was just a problem of high-income people in high-income countries, and therefore, not IFPRI's concern. However, as more evidence of obesity among the poor became available, I changed my tune.

If, in fact, malnutrition consisted of the three components: Lack of dietary energy (expressed as insufficient calorie intake), micronutrient deficiencies, and overweight and obesity, it should be reflected in IFPRI's research priorities and my oral presentations. Since then, I have used the term "the triple burden of malnutrition" to get away

from the widespread notion that insufficient calorie intake was a good measure of malnutrition and that food security should be measured in terms of calorie intake.

Household food security, which was mostly understood as access to enough food, where “food” usually referred to dietary energy, would no longer be an acceptable measure of malnutrition. In fact, people who met their dietary energy needs could suffer from micronutrient deficiencies, and those whose intake exceeded their calorie needs could be obese. Yet, both groups would be “food secure.” In all fairness, I should mention that FAO’s definition of food security did include “meeting nutrient needs,” but most applications of the term, including FAO’s own estimates of “undernourished people,” which was translated by many to mean food insecure people, left out a large share of people suffering from micronutrient deficiencies. As an illustration, FAO’s estimate of food insecure people has varied around 800 million during the last 20 years, but it is estimated that about 2 billion people suffer from micronutrient deficiencies. Agricultural research priorities, which usually emphasize grains and other stable foods rich in calories rather than micronutrient-rich fruits and vegetables, is another illustration of the heavy emphasis on more calories as a way to reduce malnutrition.

So there was—and still is—a need for a different measure, which would include the triple burden. The obvious one was the number of people who did not consume a healthy diet. That would measure the food side of the malnutrition problem, and therefore, be most relevant for food policy. But a healthy diet would not assure good nutrition, because it ignored the impact of other factors such as water quality, infections, childcare, and other factors. I tried to include these issues in my presentations, always focusing on the economics and policy aspects, rather than nutritional science. I have never taken a nutrition course, and I have avoided pretending to be a nutritionist. Other nutrition-related topics covered in my papers and oral presentations included 1) nutrition monitoring and surveillance, drawing on my earlier work on nutritional surveillance at Cornell University; 2) agriculture and nutrition, drawing on my earlier work at CIAT and Cornell University; and 3) government transfer programs and their organization.

- Macroeconomic policies, globalization, and food security. In my oral presentations on these subjects, I used the best available, science-based evidence to counter two kinds of misinformation: 1) that spread by advocacy groups with very effective communication skills, about imaginary risks associated with globalization, international trade, and certain macroeconomic policies; and 2) that spread by the World Bank, the International Monetary Fund (IMF) and the US government



about the Washington Consensus being the best or only approach to dealing with the need for macro-economic adjustment in low-income countries. In this effort, I tried to replace the opposition to globalization with suggestions about how to use globalization for the benefit of low-income people and their food security. Furthermore, based on the lessons learned from the aforementioned research I did with UNICEF, I suggested alternatives to the Washington Consensus to solve macroeconomic problems, without the severe negative effects on the poor. As mentioned in the next chapter, I developed these efforts into a graduate course at Cornell University. I also wrote papers and gave presentations about governance and other issues related to the previously mentioned political economy approach.

- Agricultural and rural development. My papers and presentations in this area cover a variety of issues, including the continuation of John Mellor's work on agricultural development as a driver of economic development and poverty alleviation; the importance of investment in rural infrastructure in Africa; fertilizer policy; various aspects of sustainable management of natural resources and interaction between agriculture and the environment; crop protection, pesticide use, host-plant resistance, and organic agriculture; property rights, collective action, and farm size; and production, market risks, and uncertainties. I included

evidence of the importance of agricultural research in many of my presentations.

- Demographic and gender issues. To counter the widespread misinformation that population growth would soon outpace food production, leading to widespread hunger and death, I included a brief discussion of population growth, its causes, and its expected future trend in most of the previously mentioned presentations about the global and national food situation. But I also gave a few presentations specifically focused on demographic variables. Similarly, gender issues, with particular reference to the role of women in agriculture and the food value chain, along with suggested policy interventions to promote gender equality, were discussed in many of the papers I presented, but I gave very few presentations specifically on gender issues. I felt the gender issues, particularly, the role of women in all aspects of food systems, was most effectively dealt with as an integral part of food systems activities.

I was pleased to be invited to join the Board of Trustees of the International Center for Research on Women (ICRW). I learned a lot from interaction with the other board members, but I am not sure I had any significant impact. After a few glasses of red wine at a private party, Irene Tinker, who was key to the creation of ICRW, named me as an Honorary Woman, a nomination I accepted with pride and humor. As discussed in Chapter 10,

I learned much more about the importance of incorporating gender roles in food policy analysis in my interaction with graduate students at Cornell University.

- Conflict, terrorism, international stability, and food security. The terrorist attack on the United States on September 11, 2001, occurred one month before I was to receive the World Food Prize in Des Moines, and I gave my acceptance speech on international terrorism and food security, drawing on my earlier work on the two-way causal link between conflict and food security and nutrition in selected developing countries. Except for a few papers and presentations, I had done prior to 9/11, I did not do any more work on this matter.
- Development assistance, food security, and donor benefits. Results from analyses I did to test the hypothesis that development assistance was beneficial for donor countries showed that US government assistance to promote agricultural development in Asia had yielded large economic benefits to the United States in the form of expanded demand for American export commodities, including agricultural products. In fact, properly targeted development assistance was a remunerative investment. It was—and still is—a win-win proposition for donor and recipient. I used these findings in a number of presentations, including a hearing in the US Congress and presentations to American and European policy

advisors and policymakers, to counter the incorrect but generally accepted notion by the American public that development assistance was a draw on the American economy. Economic support for agricultural research was particularly remunerative for the United States, because, in addition to expanded export earnings, the research results were frequently useful for American farmers as well. A true win-win.

I also wrote papers and gave presentations about the role of food aid for emergencies and to support development projects.

### *Other activities*

Of the many other activities I got involved in during my time as DG of IFPRI, I shall mention only three.

The World Food Prize Foundation. Receiving the World Food Prize in 2001 was a very important recognition of the work I had done on food systems, with particular reference to the aforementioned 2020 Vision Initiative. As I mentioned in the introduction, I was fully aware of the tremendous importance of mentors, colleagues, and others in supporting and facilitating my work. The Prize was clearly a recognition of a team effort, and I tried to avoid an expanded ego. It was time to apply Jante's Law. Nevertheless, the Prize opened new and potentially useful avenues for improving the impact of my work, including easier access to policymakers and the news media. In fact, it is my understanding that I received the Prize mostly for my ability to communicate food systems-related evidence,

rather than for having generated it. Furthermore, as a World Food Prize Laureate, I was invited to attend the annual celebrations of new Laureates and the associated three-day symposium—The Borlaug Dialogue—which attracted more than a thousand participants from various parts of food systems, a great opportunity to network.

Wageningen University. I was appointed as a Distinguished Professor at Wageningen University in the Netherlands for three years beginning March 2001. It was extended for another three years until March 2007. My role, as specified in the contract, was, “In your capacity as Distinguished Professor you will act as a sounding board, a source of inspiration and an ambassador for Wageningen University and Research center (Wageningen UR). You will provide consultancy services to Wageningen UR during 10 working days per year.” I met these requirements through two visits to Wageningen annually during which I interacted with various members of the faculty and leadership and gave an oral presentation on some selected food policy aspect. I completed a few other activities for Wageningen, including being Chair of the International Advisory Board for the Mansholt Graduate School. I accepted the offer as Distinguished Professor, partly, to strengthen collaboration between IFPRI and Wageningen University, and subsequently, between Cornell and Wageningen, and partly, to personally learn about ongoing research and teaching at Europe’s foremost agricultural university. I should also admit that I was honored to be a Distinguished Professor at such an outstanding agricultural university. It turned out to be a most

constructive and interesting association for me, and hopefully, useful for Wageningen.

Consultant to President Museveni. I was invited to join a six-person team, consisting of two Ugandans and four members from outside the country, requested by the President of Uganda, Mr. Museveni, to develop an agricultural development strategy for the country. The Danish economist and leader of the Danish investment agency for developing countries, Sven Riskær, was the team leader. I mention it here, not because I know it had much impact. In fact, I do not know whether it had any impact. I mention it, because it was very interesting and unusual. The team met with the President under his famous big tree in the backyard of his residence. He told us what he wanted us to do and answered our questions. He then said that a military helicopter would be made available to us for four days to take us around the country.

If not unique, it was at least a very unusual way to get to know a country. But we did it, and I learned a lot from conversations with government officials, farmers, and others where we sat down. I also learned that Ugandan helicopters are not soundproof. It took a while for me to regain full hearing capacity after the trip ended. We met with the President again and gave a report. A more complete written report was delivered a few days later. I should mention here that I had been to Uganda several times before and met with the President and the Vice President Speciosa Wandira-Kazibwe on several occasions. Both played an important role in the 2020 Vision

Initiative, he as chair of the advisory committee and she as his stand-in, when he was unavailable.

### *Recognitions*

During the time I was DG of IFPRI, I received several recognitions of my work, including the following:<sup>4</sup>

1. The World Food Prize in 2001.
2. Honorary doctoral degrees from four universities (I received a fifth during the time period covered in Chapter 10):
  - a. Doctor of Technical Sciences (*honoris causa*) from the Swiss Federal Institute of Technology, Zurich, Switzerland (1996)
  - b. Doctor of Science (*honoris causa*) from the Tamil Nadu Veterinary and Animal Sciences University, Tamil Nadu, India (1999)
  - c. Doctor of Law (*honoris causa*) from the University of Aberdeen, United Kingdom (1999)
  - d. Doctor of Agricultural and Environmental Sciences (*honoris causa*) from Wageningen Agricultural University, the Netherlands (2000)
3. Named Fellow of the American Association for the Advancement of Science (AAAS) (1997)
4. Named Fellow of the American Agricultural Economics Association (AAEA) (2000)

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<sup>4</sup> A complete list of recognitions is shown in my curriculum vitae in Appendix 1.

5. Agronomprisen (2000). Danish Society of Agricultural Professionals
6. Distinguished International Alumni Award, Oklahoma State University (1998)
7. Distinguished Alumnus of the Economics Institute, University of Colorado (1993)
8. Charles A. Black Award for outstanding record of research and communication awarded by the Council for Agricultural Science and Technology (CAST) (1998)
9. Best paper prize for article in the journal, *Environmental Conservation*, awarded by the Foundation for Environmental Conservation, Geneva, Switzerland (1996)
10. Distinguished Policy Contribution Award, awarded by the American Agricultural Economics Association (AAEA) (2002)
11. Honorary member of the International Association of Agricultural Students (IAAS) (1997)
12. Rosenkjær Prisen for Policy Communication, Danish Radio (2002)
13. Horticologo de Honra awarded by the Portuguese Horticulture Association (2001)
14. Other recognitions: Who's Who in: 1) American Education; 2) America, and 3) Science and Engineering; International Who's Who of Professionals; Strathmore's Who's Who Registry of Business Leaders; Paragon Who's Who; Men of Achievement; and the Danish Blå Bog.



## **CHAPTER 10**

### **Returning to Cornell to Finally Sit in the Babcock Chair (2003–2013)**

I accepted the offer from Cornell University to become the H. E. Babcock Professor of Food, Nutrition and Public Policy and joined January 31, 2003. I was granted tenure, which for all practical purposes was for life, since a legal retirement age was not permitted in the United States. However, my plan—which I did not tell Cornell University about—was to retire after about 10 years. In fact, I retired on May 31, 2013, only a few months beyond the 10 years I had planned. The H. E. Babcock Professorship was an endowed chair, meaning that an endowment, which had been made in the past, was invested by Cornell University. The economic returns were to be used to cover my salary and any other legitimate expenses, such as research costs, travel, secretarial support, graduate students, and other expenses associated with my work. I was free to use the funds as I saw fit, as long as it related to my work. It was a plum of a position. Cornell had other endowed chairs, but this one had a bigger endowment than most of the others.

Soon after I joined, I became a member of the field of Nutrition in Cornell's Graduate School. This permitted me to be supervisor for graduate students in Nutrition. About three months after I joined, I was offered and accepted a position as International Professor of Nutrition Economics and Policy in the College of Agriculture and Life Sciences, and about two months after that, I was offered the

position as Professor of Applied Economics in the Dyson School of Applied Economics and a member of the field of Applied Economics. That meant I could supervise graduate students in Applied Economics. On July 1, 2006, or about 3.5 years after I joined, I became J. Thomas Clark Professor of Entrepreneurship and a member of Cornell's Entrepreneurship Program. Later, I also became a member of the graduate fields of Public Management and International Agriculture. I do not remember the exact dates. I now had four professorships and membership in several graduate school fields, but with only one paycheck, the one coming from the Babcock endowment. So, why so many titles and field memberships?

Each had an explanation. The International one came about because the College wanted to show that it had an international faculty. That was it. The position in Applied Economics had more substance. It gave me a home among applied and agricultural economists. I participated in department activities, such as workshops, seminars, and, not to forget, holiday parties. It also permitted me to apply for funds from the department for use to support students and related activities. I became known to graduate students in the School, and some of those interested in international development and food policy would seek me out as their supervisor to do their dissertation research on topics of common interest. The Entrepreneurship Professorship came about in response to my development of a social entrepreneurship approach to teaching, as discussed in this chapter. It also gave me access to funding from the Program for the preparation of case studies.

Like all faculty positions at Cornell, my position as Babcock Professor was for nine months annually. The three summer months were available for other activities, including research funded with project money, paid or unpaid consultancies, or vacation. I spent some of the annual three-month periods doing research with project funds. I also tended to my position as Distinguished Professor at Wageningen University, initiated toward the end of my tenure at IFPRI, as mentioned previously. But most of the three-month periods was spent doing training programs at the University of Copenhagen, as Professor of Food and Agricultural Economics, a position I accepted on January 1, 2003, and kept until October 1, 2010, when the University changed its teaching from a semester system with a summer session to a quarter system.<sup>5</sup> The latter did not fit well with a summer session, such as the one I had taught. I rejoined the University of Copenhagen as Adjunct Professor on January 1, 2012, a position I still hold. For all practical purposes, this position is an honorary position. No work commitments and no pay. It gave me the opportunity to be part of the faculty in the Department of Food and Resource Economics and to undertake research and teaching within the University, an opportunity I have so far failed to exploit.

My work at Cornell University consisted of teaching, research, supervision of undergraduate and graduate students, including supervision of MS theses and PhD dissertations, and some consulting. I will first discuss my teaching, then my research followed by a description of

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<sup>5</sup> The Royal Veterinary and Agricultural University was merged into University of Copenhagen in 2007.

each of a large number of other activities in which I was involved during the time I was Babcock Professor (2003–2013).

### **Teaching and student supervision**

Soon after arriving at Cornell University, I began planning my teaching. It was expected that I would teach some aspects of food and nutrition economics and policy, but I was never given any guidelines or orders about what courses to teach. No courses were assigned to me. I had to develop my own. In fact, except for participating in certain committees and a few other division, college, and university initiatives, I was never given any orders or instructions about what to do in my new position. It was entirely up to me to decide what to teach and what to do research on. I was also free to undertake consulting work. I could accept payment for a certain number of days of consulting per month. Any additional consulting income would go to a university account for me to spend on my work. I was free to raise funds for my work as long as I followed university guidelines and paid overhead charges. I was free to spend the interest incomes from the endowment as I saw fit, as long as it related to my work. As I have already mentioned: A plum of a job! But I get carried away. Back to teaching.

I decided to develop two courses. One would be on food and nutrition policy for advanced undergraduates and graduate students. The other would be for graduate students only and would cover globalization and its economic relationship to food security and nutrition. Both courses would be focused on developing countries.

Initially, I based both courses on a combination of lectures and Q&A. My overall goal was to help the students strengthen their knowledge and analytical thinking. My subjective criteria for success was the extent to which the course would give the students the skills to identify challenges in the area of food and nutrition and analyze policy options and their consequences. In order to broaden access to the lectures, they were all placed on the Internet, and DVDs were made and distributed to various universities in developing countries. But I soon concluded that long lectures were boring for both presenter and students. So, what to do?

*A social entrepreneurship approach to university teaching*

I believed then, and I believe now, that active student involvement is key to learning, and I felt that a case study approach would be the way to go. A few lectures to provide overviews of the various sections of the material would be included. The rest would be case presentations and moderated discussions. With that in mind, I developed what I called a social entrepreneurship approach to university-level teaching and used it for the food and nutrition policy course. The idea was to instill a social entrepreneurship attitude in the students to facilitate their contributions to more innovative and effective future policies enlightened by, and based upon, existing and new evidence. This would strengthen the students' ability to undertake policy analysis, policy advice, design, and implementation.

Before finalizing the approach, I invited experienced university-level teachers and policymakers from Bangladesh, Chile, China, Denmark, Germany, Ghana, the Netherlands, Peru, Russia, and Uganda to serve as members of an Advisory Task Force. Based on their advice, including that obtained at a meeting at Wageningen, I finalized and implemented the approach.

The approach involved participatory training based on cases of real policy issues facing decision-makers in the public and private sectors, as well as in civil society. I developed guidelines for the use of the cases in the classroom. They are available on the Internet, and suffice to say, that each case would be presented by three students. That presentation would be followed by classroom discussion. I would moderate the discussions and answer any questions. The class session would end with my brief synthesis of the case and the discussion. As the moderator, I called on individual students, who might not otherwise participate. The written version of each case was made available to all students prior to the class, and they were encouraged to read it and come prepared to either present (presenters were preassigned) or discuss.

To make this happen, we needed cases. I checked with the Harvard Business School, which bases its teaching on case studies, and how much they paid to have the cases developed. I quickly concluded that I could not afford it. Instead, I talked with some of the best graduate students I knew and invited them to work with me to develop the initial cases. Their remuneration would be to get their names on the cases they developed and the learning

associated with the process of developing the cases. Since the cases would be published, it might be useful for their CVs. They would also benefit from the excitement of working in a group of highly motivated fellow students.

That worked beyond my wildest dreams. The first group, which, as I recall, consisted of 5–6 students and me as the facilitator, developed a set of excellent case studies. Group discussions, which included students commenting on each other's cases, were rewarding and strengthened the cases, which all followed an agreed upon format.

I enticed more graduate students to write cases, and I received some funds from the Cornell Entrepreneurship program to help pay for outside case writers. As part of my World Bank consultancy in Central Asia, discussed in chapter 11, cases were developed by colleagues in the region and placed on the website as well. Within a few years, we had written more than 100 cases and made them available on the website in open access, where they remain. They cover the following policy areas: human health and nutrition policies; food security, consumption, and demand policies; poverty alleviation policies; ethical aspects of food systems; domestic market policies; production policies; natural resource management policies; governance, institutions, and macroeconomic policies; and trade and globalization policies.

Together with Derrill D. Watson, II, who worked with me as a postdoctoral fellow, I wrote a textbook to support the case studies. The book was published by Cornell University Press, 2011, and a lower cost version was published by the Academic Foundation in New Delhi 2015. By

2008, 62 case studies were completed. They were published by Cornell University Press in three book volumes, edited by Fuzhi Cheng and me, and distributed for free to universities in developing countries to facilitate their use without depending on Internet access. The cases developed after the books were published are available only on the Internet.

I could tell from the creative tension in the classroom that the students were excited and really enjoyed the case study approach. This was confirmed by the many positive comments I received and the formal evaluations at the end of each semester. The large increase in the number of students who wanted to take the course is another indication that the students liked it. About 25 students enrolled the first semester. My feeling was that the approach would work best for groups of less than 30 students, and I capped it at that. That worked only for one more semester. The third time the course was offered, more than 100 students wanted to enroll and, I decided to create three parallel courses, each of 30 students. That still meant that I had to reject a number of students who wanted to enroll. I interpreted the strong student interest to mean that the rumors were that it was a “good” course. But just because they enjoyed the course does not mean they learned more than they would have in a lecture course.

Bethany F. Econopouly, Patrick F. Byrne and Marc A. Johnson, from Colorado State University, wrote an article in the *Journal of Natural Resources and Life Sciences Education*, Vol. 39 (1), 2010, pages 79–83, about the use of the case studies in a course they taught (remember that



the cases were available in open access for anybody). They evaluated the effectiveness of the case studies and concluded that, “Based on our experience, case studies can make positive contributions to similar courses, especially if efforts are made to improve class discussions and synthesis comments are made by the instructor to tie the case studies to the rest of the course”. This finding seems to justify the importance of a textbook linked to the cases, as well as a few lectures to provide overview of the various sections of the course.

I have no science-based proof that this approach was better than a more traditional lecture-based approach to prepare the students for their subsequent professional careers, but I believe so, and it was a lot more enjoyable for all involved. Of all the students who took the course and submitted the anonymous evaluation, only one made a critical comment about the course. The student said that she/he had come to Cornell to listen to the professors, not the other students. I interpreted that to mean that she/he would have preferred lectures, rather than active class participation. Fair enough, but only one of several hundred students apparently felt that way.

I wanted to promote the cases and the teaching approach beyond Cornell. I used it at Wageningen, the University of Copenhagen, and at Kilimanjaro Christian Medical College in Uganda. I have received feedback from colleagues and friends at other universities in the United States that they used the cases as well, but I do not know the extent to which they were or still are used. I applied to DANIDA for funding, so I could promote the approach in

developing countries. I got the money and invited professors from universities in Asia and Africa to attend workshops in Bangladesh, China, and Uganda. The approach was illustrated through classroom simulations at each of the three workshops, and each of the approximately 30 participants attending each of the workshops received copies of the three case study books. Of course, they also had access to the 100+ cases on the Internet and the textbook. I received very positive responses from most of the participants from Asian universities. They said they would use the approach in their teaching. I do not know whether they actually did. Some of the professors from the African universities were less enthusiastic. Their concern was the additional preparation time required. It was less time consuming to give lectures, and since they got paid very little for teaching, and therefore, had to earn incomes from consultancies or other activities, they were not happy about spending more time than necessary on teaching. That was understandable but unfortunate for the students.

Nanjing Agricultural University requested and was granted permission to translate the case studies of particular interest to Chinese students. Thirty-two cases were translated to Chinese and published by China Agricultural Press in a book titled, *General Case Studies*. I do not have information about how many students benefitted from the cases.

The case study approach was also used in a World Bank consultancy for Central Asia, 2014–16, that is further discussed in Chapter 11. Suffice it to say, at this point, I supervised food policy research by colleagues from five

Central Asian countries using the case study approach. The first year's case studies were added to the collection on the website. The case-based research in the region has continued, and four years of studies have been completed. A call for proposals for the fifth set was made in mid-2020. The methodology stays the same.

Toward the end of 2017, I was approached by the leadership of Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), an African food security network, Lindiwe Sibanda and Sithembile Mwamakamba to demonstrate how to use the Social Entrepreneurship teaching approach. I developed the background material for presentation at a workshop in Cape Town. I then ran the workshop as simulated classroom sessions with students, using the format developed for Cornell University. In my assessment, the participating students strengthened their ability to analyze food policies and policy options. The sessions helped bridge the gap between the more theoretical learning and the environment in which real policy debate and decisions take place. I assume the workshop was followed up with the use of the teaching approach in network countries.

*The graduate course on globalization, poverty, and nutrition*

As in the aforementioned course, I wanted to promote active student participation. Since the course on globalization was for graduate students only and designed for a smaller number of PhD students, I organized it as a moderated discussion or seminar-style course in which I

would give a 15–30 minute introduction to the topic of the day and then use the rest of the class session for discussion. It was my impression that PhD students would prefer such an approach, in which methodologies and findings from refereed journal articles could be brought into the discussion and merged with the current debate and policies about globalization and the impact on low-income people and their food security and nutrition. The approach was not innovative, but I believe it worked better for a small group of PhD students, than either a case study approach or a straight lecture-based course.

*Integrative Graduate Education and Research Training Program (IGERT)*

I was a co-principal investigator with Christopher Barrett for a five-year National Science Foundation grant on “Food Systems and Poverty Reduction.” The grant provided financial support for PhD students to cover both tuition and research expenses, related to their dissertation research. The support for each student ran for 3–4 years and benefitted several students. We were told at the outset that it was a one-time deal with no chance of extension or a new grant. (It was part of a special one-time allocation facilitated by President Obama to support science.) As the availability of the funding became known to prospective students, the number of applications increased, and it was frustrating that we were unable to support more students. Our attempts to find funds elsewhere to continue the program failed. In my opinion, the program was excellent, and maybe we did not try hard enough to find more money. It was a clear lesson to avoid very short-term

projects. Continuity of good programs is key to long-term success.

## **Research and research collaboration**

*Political economy research in collaboration with the World Institute for Development Economics Research (WIDER).*

Food price volatility is one of the major challenges facing the current and future global food systems. Beginning in 2006–7, global food prices fluctuated greatly around an increasing trend, and price spikes were observed for key food commodities such as rice, wheat, and maize. The full or partial transmission of these global food price changes to individual developing countries, together with domestic food price changes caused by domestic factors, such as extreme weather events and market disruptions, caused governments to respond in a variety of ways. The nature, content, and causes of the food price fluctuations reflected in the so-called food crisis, was amply described and analyzed, but very little was known about the policy processes that led to the policy responses and the relative power and behavior of the participating stakeholder groups. As I continued to read the multitude of reports and articles on the food crisis, it became clear that there was a need to better understand how and why governments responded as they did to enhance the existing knowledge of the political economy of food price policy and to assist governments in their policymaking, as they confront future food price fluctuations.

I prepared a proposal for political economy studies of food price policy in 14 developing countries, as well as the United States and the European Union. The work was undertaken by a team of researchers from the study countries and a few others to help pull together generalizable lessons from the work. It was going to be a large project, and I needed external funding, which I received from the Gates Foundation. I approached Finn Tarp, the director of the United Nations University Institute for Economic Development Research (WIDER), located in Helsinki for research collaboration. A very fruitful collaboration with WIDER followed. The output of the project, which lasted for three years, included 21 policy briefs and a book published by Oxford University Press, a set of working papers, and a string of oral presentations. WIDER provided funding to make the book available as an e-book in open access. In my opinion, the project made a significant contribution to the understanding of the political economy of food price policy and generated important lessons for future policymaking. Whether it actually impacted anybody's food security and nutrition, or will in the future, is an open question.

### *Food systems for improved human health and nutrition*

Soon after the food crisis ended, some international agencies, academics, and policy advisors began to express an interest in using expected nutrition effects to guide agricultural projects and policies. This interest grew exponentially, and a large number of reports, papers, and articles were written. Unfortunately, most of this written material was conceptual and repetitive with very little new

empirical evidence or innovative suggestions for action. Hundreds of flow diagrams with varying degrees of artistic innovation were produced. I jumped into the fray and produced my own. Finally, what I wanted to happen 20 years earlier was now finally catching on. I wrote papers, gave oral presentations, included the topic in the textbook I was writing with Derrill Watson, and used it in teaching. I expanded my work to examine how food systems could be designed and implemented to improve health, both through improved nutrition and in other ways, for example, through management of zoonotic diseases and use of chemical pesticides in agriculture.

But the policy analysts and economists were stuck. We did not know how to translate all the flow diagrams and conceptual papers into constructive action. Enter international agencies with money. The Scaling Up Nutrition (SUN) movement was an example of such an international institution that had money for distribution. That caught the attention of developing country government agencies, which until then had kept agriculture and nutrition in separate silos. A large number of projects were initiated and funded, and new policy-relevant empirical results were forthcoming, some from PhD students that I supervised.

Efforts to improve nutrition and health through the design and implementation of agricultural and other development projects and policies were given a significant lift by the International Nutrition Conference organized by FAO and the World Health Organization (WHO) in 2013. As far as I know, the impact of the conference and follow-up activities has not been documented, but I am afraid the

excitement around this topic has waned, partly, because of its complexity, and partly, because of the difficulty to convince those in charge that nutrition should play a major role in their decisions about various agricultural and development activities. A stronger emphasis on political economy issues in this work is urgently needed. In particular, we need to better understand the decision-making processes and how to design win-wins to satisfy policymakers' true priorities with the priority to assure healthy diets and good nutrition for all. Would a focus on ethics help?

*Ethics, behavior of agents in the food system, and food security*

The main reason I decided to pursue work in economic development and not agricultural marketing, as I originally planned when I began my studies at Oklahoma State University, was that I was emotionally influenced by what I read in graduate school about the massive poverty, hunger, and suffering in developing countries. As I proceeded from reading descriptions in books to experiencing realities in poor African villages and households, and as I watched people suffer and kids on the brink of starving to death, I became absolutely convinced that I made the right choice. Surely this was not fair in a world as rich as ours. I felt my training in agricultural economics could be put to use to help alleviate such suffering. As I mentioned in the prologue, I became more convinced than ever that I should focus my efforts on alleviating human misery associated with food insecurity, malnutrition, and death.



Don't get me wrong. I did not sacrifice anything to help others. I could have my cake and eat it, too. I could pursue a very interesting professional career doing what I thought would help reduce hunger and human misery. A true win-win. But could I have done more by sacrificing? Would my impact have been greater if, instead of doing food policy research, I had worked in a refugee camp distributing food or joining an NGO to help smallholder farm families grow more food? The pathway from food policy research to little Johnny's nutritional situation is long and uncertain. Did the research really matter or was it just a means for me to promote myself in the profession? Or to make me feel good? I want to believe I did what I did for the right reasons, but I have no proof. Neither do I know for sure that any poor person really benefitted from what I did.

These thoughts came to me when I traveled in areas with widespread malnutrition and poverty and interacted with mothers who did not know whether they would have food for their children the next day. I felt helpless, because I had nothing to offer them on the spot. I had to believe that the evidence from my research was being used by policymakers to do what I wanted done, but could not. Those thoughts brought me to ethics. The existence of poverty, hunger, and related suffering and death among parts of a country's population, while others—including me—were enjoying excessive material goods, was not ethical, was it? But did ethical considerations even enter into governments' decision-making processes and, if so, how powerful were they in the final decisions? Do policymakers perceive a duty to guide policy design and implementation on

the basis of ethical considerations? Are policymakers confronted with a conflict between economic and ethical considerations? Do policymakers base their behavior on the ethical issues embodied in religion or are there other cultural factors that are more important?

I felt answers to these and related questions might help design food policy analyses and advice, so that policies would be more effective in improving food security and nutrition. Of course, I realized that the answers would vary among decision-makers, but I thought that some generalizable lessons might be derived from a conversation among the people who knew something about it. So, like I did when I wanted to know more about political economy, I organized a workshop and invited participants from developing and developed countries to prepare papers on specified topics for presentation and discussion at a workshop. I wanted to have a multidisciplinary conversation, so I invited participants from philosophy and ethics, religion, economics, policy analysis, sociology, and nutrition, as well as government policymakers and leaders from civil society and agriculture. The keynote address entitled, "Social Justice, Ethics and Hunger: What are the Key Messages?" by Mary Robinson, the former Irish President, provided a very thoughtful framework for the workshop discussions.

The keynote, papers, and outcomes of the workshop were published in a book that I edited with Peter Sandøe, Ethics Professor at University of Copenhagen, entitled *Ethics, Hunger and Globalization* (Springer, 2007). The workshop discussions were very enlightening. I, and all other

participants, I believe, came away with much new knowledge about how ethical aspects of food security and nutrition are perceived from various disciplinary and experiential backgrounds. A number of lessons were proposed about how ethical considerations could play a bigger role in food and nutrition policy, and the book provides a valuable source for future work on the subject. I followed up with a large number of oral presentations and papers. Did it have any impact on government behavior and child health and nutrition? I do not know.

## **External activities and consultancies**

### *The CGIAR Science Council*

Replacing the Technical Advisory Committee (TAC) with a Science Council (SC) was one of the many organizational changes CGIAR has undertaken. The change, which took place in 2004, involved a new name, new terms of reference, and all new members and chair. Some of the donor representatives and Center directors encouraged me to apply for the chairmanship. Although I had spent a lot of time within CGIAR and thought it was an outstanding institution, I was not interested in the job, mostly because of the large amount of time involved. Having recently joined Cornell University, my plan was to develop a teaching and research program about food systems, something I thought was needed at Cornell University. If I were to spend between one-half and two-thirds of my time on the Science Council (that was the estimate that actually turned out to be right), my plan would suffer. However, flattering, coming from various sources suggesting that I was the right person for the Science

Council chair, did its job, and I applied. Cornell University agreed. I was offered the job, and after a hiccup related to FAO's hosting of the Science Council secretariat, I accepted.

The hiccup was that, since the secretariat was physically located at FAO (but FAO did not pay for it), the FAO DG wanted to decide who should be hired as the leader of the secretariat. That was unacceptable to me, partly, because I knew how important it was to have a highly qualified and motivated executive secretary, and partly, because the FAO DG was known for using criteria for hiring that might not comply with the qualifications needed for a particular job. I told the CGIAR chair that I would accept the position only on the condition that I could decide who to hire as executive secretary and that she or he would have the authority to hire the other secretariat staff. He suggested that I worked that out with the FAO DG. I requested an appointment, went to Rome, and was told by the FAO DG that his authority to hire anybody he liked, could not be questioned, even for those on the CGIAR payroll, as long as the office was on FAO premises.

I left the meeting while I could still maintain reasonable courtesy, went to the CGIAR chair, and pulled my application (that actually happened at a CGIAR meeting in, I believe, in Nairobi, where I went after Rome). I am not sure what happened next, but I guess there was a conversation with the FAO DG. In any case, within a short time, I got my way and hired an outstanding executive secretary, Ruben Echeverría, who contributed immensely to the success of the Science Council and made my work as chair

manageable. This confirmed my earlier statements that, if you, as the leader, surround yourself with the most qualified people available, you will succeed and look good.

TAC had begun a project to suggest priorities for future research by the Centers. It was up to the Science Council to finish it. To be useful to Centers and donors, our first responsibility was to become thoroughly familiar with the ongoing activities. The 15 Centers' work was carried out in 240 projects, System-wide programs, and Challenge Programs, described in 821 pages. I read them all. It was clear that much good research was being done, but it did not add up to a cohesive CGIAR research program that reflected a set of CGIAR priorities. Should it? If yes, should the Science Council provide guidelines for it to happen? If no, would a continuation of the disaggregated, uncoordinated approach mean that CGIAR would forego large potential benefits from a more cohesive approach focused on system priorities to which all Centers would contribute?

As we debated this question within the Science Council, we recognized that the research environment had changed during the previous few years. Rapid advances in molecular biology and information and communication technology had opened up new opportunities for the use of science to alleviate poverty and manage natural resources, while at the same time creating new opportunities for collaboration, networking, and merging of certain research activities. Furthermore, the rapidly increasing role of private sector research and expanded use of exclusive rights in agricultural research opened up new opportunities and

threats for the CGIAR Centers and created potentially negative effects from private sector exclusive rights.

After some deliberation, we decided that the Science Council should help CGIAR capture the benefits from a more cohesive set of System priorities and related research programs but at the same time maintain the advantages of the existing decentralized structure. In other words, the Science Council should help assure that the impact of the whole exceeded the sum of its parts. We proceeded to suggest a move toward a cohesive CGIAR research program, consisting of 15–20 well-defined System priorities to which all the Centers would contribute. For this to be accepted by the many key decision-makers in the CGIAR system, consultation and information sharing was essential. I wrote a series of what we would now call blogs, as well as short notes to the CGIAR News and other outlets, and asked for sessions at CGIAR meetings to discuss how to proceed and to begin to identify priorities. Clearly, there was a need to practice a political economy approach to understand and try to merge the different perspectives and interests within the System into something implementable. As discussed next, I failed.

As part of this effort, we organized a set of two-day consultations with participation from the various stakeholder groups as well as outside experts. All of these meetings went well. A set of 20 System priority research areas were identified and, at least, partially agreed on. Then things began to go off track. The Center directors became concerned that they would lose decision space to a centralized decision-making structure. I had no problem understand-

ing their concerns. When I was DG of IFPRI, I had tremendous freedom to make decisions, and I made every effort to maintain my decision space, subject only to decisions by my board of directors. In hindsight, I may have been more successful as Science Council chair, if I had pushed for more decentralized research priority setting, basically letting each Center set its own priorities and being satisfied with the sum of the parts.

However, donors were beginning to lose patience with the disorganized approach, the obvious overlapping and repetitive activities, and the increasing number of Center activities that did not add up but merely followed the availability of funds for small consulting jobs. Most of the donors liked the Science Council suggestions. So, could we have made both stakeholder groups happy? I am not sure, but attempts would probably have resulted in a CGIAR program consisting of consulting activities, a few System-wide programs, and individual Center activities not coordinated with other similar activities at other Centers. In fact, that is a good description of what actually happened after the Systems priorities were rejected and the Science Council discontinued. Recently, a new round of reorganization of CGIAR is being undertaken, but it is too early to judge how it will influence the effectiveness of international agricultural research.

Although the efforts described here to create a more cohesive systemwide CGIAR research program was an important component of the Science Council's work, we had other priorities. In fact, we suggested the following five elements of a Science Council strategy:

1. Identify a small number of key CGIAR System priorities that focus on problems for which CGIAR is likely to have the greatest impact. That is what I mentioned previously;
2. Implement new monitoring and evaluative processes, which give more emphasis to self-evaluation and Board accountability;
3. Measure performance in terms of progress toward achieving the goals of CGIAR, on the basis of Medium-Term Plans (MTPs) and log frames;
4. Improve the quality of Center, System-wide Programs, and Challenge Program medium-term plans and logframes, as a basis for better planning and performance appraisal (linked to System Priorities); and
5. Contribute to CGIAR programmatic alignment.

Except for the System priorities, the strategy was accepted.

As my three-year contract as chair of the Science Council was coming to an end, I had lost the support of most of the Center directors. I still had the confidence of the donor community, and I was asked whether I wanted an extension. I said no. I still think the Green Revolution was the greatest development accomplishment ever and that the international Center idea was the most innovative way to undertake agricultural research with international public goods character. I also believe good research is best done in a decentralized environment, where each researcher and research manager feels ownership to the work. But applied research aimed at solving key problems must be



guided by overriding priorities to which the individual researchers and projects contribute. That was the recipe leading to the Green Revolution. Surely, to assure forward-looking, innovative activities, each Center should allocate a small portion of its resources to blue sky or basic research, but only a small portion.

*The Global Agriculture and Food Security Program (GAFSP)*

Toward the end of 2010, Christopher Delgado, a friend and former IFPRI colleague, then a staff member at the World Bank, contacted me and asked if I would accept the position as chair of the Technical Advisory Committee (TAC) of the Global Agriculture and Food Security Program (GAFSP). The request was urgent and time consuming, and I hesitated. It was urgent because donors wanted to move a relatively large amount of money fast to show their sincerity behind the L'Aguila commitments, and it was time consuming, because it had to be developed from the beginning. However, the work sounded interesting and like something that could have an important and immediate impact on agricultural development, food security, and nutrition. So I accepted on the condition that it would be for only a short period of time, until the World Bank found somebody else, who had more time on his or her hands.

It did take a lot of time, but I believe it was time well spent. GAFSP was a multilateral mechanism to assist in the implementation of pledges made at the L'Aguila conference in July 2009, and subsequently reaffirmed by the G20. Its purpose was to promote agricultural development

and improve incomes, food security, and nutrition in developing countries by filling financial gaps in developing country strategies. Donors paid into a GAFSP Trust Fund, developing country governments were invited to submit proposals, and the role of TAC was to advise a Steering Committee, consisting primarily of donors, on how to allocate the funds among the proposals. GAFSP was about real money! Most of the projects were funded at the level of US\$50 million, to be spent over a relatively short period of time. During my chairmanship in 2010–11, TAC presented two sets of recommendations to the Steering Committee, each recommending the funding of 5–6 projects. I do not remember how much we actually recommended to be granted, but I suspect it would have been around half a billion dollars in total for the two sets. To me, that was an amazing amount of money, when compared to the total annual budget of IFPRI, which was US\$24 million when I left, or compared to the peanuts we had to fight for in academia. I do not have any information about the impact of these large grants.

*The American Association for the Advancement of Sciences (AAAS)*

I first attended the annual conferences of AAAS in the 1990s, and I have attended almost every year since. I have given several presentations, and I became heavily involved in the Section for Agriculture, which I chaired for a couple of years. I was selected as an AAAS Fellow in 1997. In addition to my work with the Section, I enjoyed attending sessions that had nothing to do with agriculture. It was like a smorgasbord of opportunities to learn about

things I knew little or nothing about. One of goals of the annual conferences was to disseminate scientific knowledge to the news media and across disciplines to other scientists and the general public. Therefore, the presentations were designed so that specialized knowledge in a particular subject was not necessary to understand the presentations. That, of course, is very different from conferences held by professional societies, where the jargon is used and understood. It is interesting that most of the articles in the scientific journal *Science*, which AAAS publishes, are not easily understood by the general public. It is fortunate that Birgit also is interested in attending the AAAS conferences, and we intend to continue attending as long as we can.

*The American Agricultural Economics Association, later  
The Agricultural and Applied Economics Association  
(AAEA)*

I became a member of the AAEA when I was a graduate student, and I was heavily involved with the Association until my retirement in 2013, including the participation in many of the annual meetings. I received the AAEA PhD Dissertation Award in 1969, the AAEA Distinguished Policy Contribution Award in 2002, and I was selected to be an AAEA Fellow in 2000. I was elected by the membership to be President in 2006, which involved being a member of the Executive Board from 2005 to 2007. Other interactions with the AAEA included chairmanship of the AAEA Nomination Committee, the AAEA Foundation Endowment Committee, the AAEA

Centennial Committee, and the AAEEA T. W. Schultz Committee.

I was invited to present the annual Fellows Address in 2002 and chose the topic “Food and Agricultural Policy for a Globalized World: Preparing for the Future.” My presidential address in 2005 was on “Ethics and Economic Policy for the Food System.”

*The International Association of Agricultural Economics (IAAE), The Australian Agricultural and Research Economics Society (AARES), and the European Society for Agricultural and Food Ethics (EurSAFE)*

I have been a member of these associations and presented papers at some of their meetings. However, I never had any leadership positions in any of them.

*The United States National Academy of Sciences (NAS)*

My interaction with NAS included member and chairmanship of various committees, including the Roundtable on Science and Technology for sustainability (STS Roundtable), the planning committee for an Institute of Medicine Workshop on Mitigating Nutritional Impact of the Global Food System, a focus group on food waste, and my current membership of a One Health Collaboration Initiative. The most rewarding assignment was as chair of the Committee on Food Security for All as a Sustainable Challenge, which resulted in an excellent report entitled, “Measuring Food Insecurity and Assessing the Sustainability of Global Food Systems,” published by the National Academies Press, 2011.

### *The Food and Agriculture Organization (FAO)*

My collaboration with FAO continued after I left IFPRI. In addition to participating in various FAO meetings and conferences, two interactions deserve mentioning. First, I was given a significant role in the preparation and execution of the International Nutrition Conference, held in 2013. I participated in drafting the agenda and outlining the desired content of the Conference, as well as giving oral presentations and moderating sessions. The work was interesting but difficult because of internal disagreements within FAO and a less than perfect collaboration between FAO and WHO, the two formal organizers of the conference. I believe the Conference achieved its goals, but I am less sure about the subsequent impact on nutrition. The follow-up activities could probably have been better.

The second interaction was my participation in drafting the lead section of FAO's Food Security Report, which was focused on agriculture and nutrition.

### *Tata–Cornell Program*

When the Tata Foundation donated a 25 million dollar endowment to Cornell University for research related to food security and nutrition in India, I was asked by the university president to serve as an advisor. After a couple of years of leadership difficulties, during which time my frustration grew, because I could see opportunities foregone, I helped forge a leadership change. The new Program Director, Prabhu Pingali, turned the program into an outstanding contributor to improve Indian food security and nutrition through enlightened applied research and

graduate training. I served as chair for an advisory committee for the first period of his tenure, but it soon became obvious that a formal advisory committee was no longer needed. With additional funding from the Gates Foundation, the Program has developed into a very important generator of action-oriented evidence.

### *The Danish People's University (Folkeuniversitetet)*

*Folkeuniversitetet* (The People's University) is an innovative institution that has reached out to many thousands of Danes over the years. I have been fortunate to have been invited to speak at several of its seminars, workshops, and conferences in various locations, including Skærum Mølle, Aarhus, and Tønder. I owe Gudrun Aspel, who has run the Skærum Mølle center over many years, for her invitations to participate in the annual Thorkild Kristensen seminar. I have enjoyed these opportunities to interact in informal settings.

### *Various consultancies*

During the period covered by this chapter, I undertook several consultancies, including the following:

- The Friedman School, Tufts University, Ras al Khaimah (FSTU-RAK). The FSTU-RAK was a private university established in Ras al Khaimad, the United Arab Emirates in 2007, as an off-campus of Tufts University. As a member of a three-person "visiting Committee," my role was to help evaluate the university for the purpose of its accreditation. Following a meeting at Tufts

University, we spent three days in Ras al Khaimad, together with reviewers for the Commission for Academic Accreditation of the Ministry of Higher Education and Scientific Research of the United Arab Emirates. The results of our work were presented in a report to Tufts University. We concluded that the university was deserving of accreditation. I do not know whether the work was useful or what happened afterward.

- The World Economic Forum (WEF). I joined a WEF Hunger Expert Group and participated in discussions at Davos meetings in 2003 and 2004. The Group discussions initially assessed whether the Millennium Development Goals and the World Food Summit Goals could be achieved by 2015. We concluded that it was possible, but only if governments would take the well-known steps needed. We identified recent actions that enhanced or harmed the efforts to achieve the goals and decided to monitor the most important of them. We derived a set of recommendations and suggested a new paradigm to alleviate hunger in the world. The discussions were interesting and educational, but I concluded that it was unlikely they would lead to reduced hunger and decided to end my work with the Group.
- The Global Development Network (GDN). I entered into a consultancy with GDN from September 2013 to January 2014 to help establish a food security research framework. This involved

the preparation of a concept note, which would identify the most pressing food security issues, specify an intellectual framework for further research, and suggest knowledge and data gaps for which additional research was needed. I also identified developing countries where the research capacity was weak to help GDN decide which countries to work with to strengthen such capacity. Finally, I organized an academic workshop to present the results and suggest next steps.

- Global Alliance for Improved Nutrition (GAIN). In a letter dated July 17, 2015, the Vice Chair of GAIN's Board of Directors, Joachim von Braun, invited me to lead an independent review of GAIN's governance structure, with support from a second reviewer, David Governey. I was familiar with GAIN. In fact, I was asked whether I would consider being its Executive Director, when it was created by the Gates Foundation several years earlier. But I knew nothing about its current governance structure. So I called Joachim and asked whether there were any particular problems for which a review was needed. He assured me that it was just a routine review. That turned out not to be the case.

David and I accepted the invitation and began collecting data from interviews with all board members, several staff members, and others. Most of these interviews were undertaken during a GAIN board meeting. It soon became clear that



there were serious governance problems. As the work proceeded, and David and I began to share preliminary findings with the Board Vice Chair and Executive Director, I was told that the latter suggested that the work stop and any preliminary findings and reports be eliminated. He did not like what we found!

However, a majority of the Board members wanted our work to continue, and we presented a 60-page report with 30 recommendations at GAIN's board meeting in Dhaka, Bangladesh, in December 2015. The final report was submitted to the Vice Chair on January 11, 2016. The report was discussed at great length at the board meeting. The Board Chair and Executive Director expressed very serious—and at times, emotional—disagreements with our findings, conclusions, and recommendations but found no factual errors to be corrected. My impression was that the other board members were satisfied with the report and the recommendations.

At the end of the session, the Board Chair declared that he would resign, and the Executive Director resigned soon thereafter. The report is confidential and can be released only with GAIN's permission. In any case, with the current Executive Director and Board Chair, GAIN is now in good hands and serving a very important purpose. In my opinion, the work David and I did resulted in a much more effective GAIN for the benefit of the intended

beneficiaries, and I believe our open, honest, and direct approach to the review was the best way for GAIN to get its money's worth from our work, even though we did not enjoy the conflict it created.

In the process of doing the work, I became very familiar with GAIN's work programs and priorities, and I was invited to share my thoughts about future priorities. This was beyond the terms of reference for the consultancy, but I was interested and submitted a "Note on Suggested Future Directions of GAIN's Work" on January 14, 2016. I do not know whether it played any role in GAIN's future activities.

- The World Bank, the African Development Bank (AfDB), The International Fund for Agricultural Development (IFAD), The Global Dairy Platform, and other institutions. Throughout my professional career, including but not limited to the period considered in this chapter, I have taken on short-term consultancies for several international institutions, including those mentioned here. Although the consulting fees played a role (I did pro bono work as well but usually not for international institutions), the main reason for accepting these jobs was to gain practical experience in the action-oriented institutions. I felt that would enhance my teaching and research, the latter being of the applied type in any case.

I shall not attempt to list all the consultancies. Suffice it to say, I learned how to interact with policymakers to get positive responses. The interaction helped me to design projects and policy with a reasonable probability for acceptance and implementation. I also observed how the weaker developing country governments at times were strong-armed into accepting proposals by some international donors (if you want my money, you do as I say). I also learned that flying into a country and telling national policymakers what to do is a very bad idea, even when you think you have done all necessary homework. Effective international policy and project assistance requires listening to those in the country and analyzing what you hear in a political economy framework. It is critically important that those who take the decision must be held accountable for the resulting consequences. Authority and accountability must go together. Although this may seem obvious, it is not always practiced in economic development assistance. It is particularly a problem when the external advisor or expert uses monetary rewards to back up his or her “advice.”

One other activity worth mentioning is my testimony at a hearing before the US Senate Committee on Agriculture, Nutrition and Forestry about the 2012 Farm Bill. My role was to present my assessment of the implications of the global food and nutrition situation for the Farm Bill being negotiated at the time. That was the second or third

time I testified to the US Congress, and I have no indication that any of them had any effect on the final design of the bills being considered.

### **Member of editorial boards**

During all or part of the time period covered in this chapter, I was a member of editorial or advisory boards of the following nine professional journals:

- *Renewable Agriculture and Food Systems*
- *Food Policy*
- *International Journal of Biotechnology*
- *Environmental Biosafety Research*
- *International Journal of Rural Management*
- *Food Economics*
- *Agribusiness in Developing/Emerging Economies*
- *Tropical Agriculture*
- *Agriculture and Food Security*

I was also Senior Editor of the journal *Food Security* for a couple of years, beginning 2012.

### **Recognitions and awards**

I received the following recognitions and awards during the time period covered in this chapter:

- Honorary Alumnus Award, Copenhagen University (2008)
- Outstanding Faculty Award, College of Agriculture and Life Sciences, Cornell University (2008)

- Fellow of the Cornell Center for a Sustainable Future (2009)
- Designated by an independent panel commissioned by the Danish newspaper *Udvikling* as the Dane who has had the greatest impact on global poverty reduction (2009)
- Selected by Miriam Goler, a Merrill Presidential Scholar, as the faculty member who made the most significant contribution to her education while at Cornell University (2009)
- Doctor of Science (*honoris causa*) from the University of Florida (2010)
- Dr. Clifton R. Wharton Emerging Markets Annual Award. Charles H. Dyson School of Applied Economics and Management (2012)

## **CHAPTER 11**

### **Combining Work and Retirement (2013–2021)**

As I mentioned at the beginning of the previous chapter, May 31, 2013, was my last day of work at Cornell University. Well, not really. It was the last day of work for which I got paid. I left with the title of Professor Emeritus, a title without pay that could come in handy in my future professional interactions. As a member of the graduate fields of Nutrition and Applied Economics, I also maintained the privilege to continue to supervise graduate students, and I was given an office and free parking on campus. Not much, you say. But that is because you do not know how scarce office and parking space actually was on Cornell's campus. Maintaining an office and a title also facilitated a continuation of my interaction with the other faculty members and students. My plan was to quit my professional work cold turkey and spend the rest of my time with Birgit, playing golf and bridge, cruising, reading, and anything else that we or I might decide to do. My employer, the Division of Nutritional Sciences' expectations about my future activities were expressed by a gift of a rocking chair with my name on it.

But why did I want to retire from what I considered such a great job? I still had my energy and intellectual capacities. I was healthy. I felt appreciated by the Division director and my colleagues, and Birgit did not put pressure on me to quit. I felt my teaching and research was as good as ever, and nobody had told me otherwise. I had spent

much time researching behavior and concluded that consumers, policymakers, and others in the food system behaved rationally, so why didn't I ? But I did.

During the last many years I had worked, if not 24/7, then at least way more than “normal” working hours. And I had enjoyed it. It was my choice. But I felt it was now time to do something else. I also felt it was time to release the Babcock Chair to a younger person. But why stop cold turkey? Because I did not want to spend the time to staying up-to-date in my field and without that, I would quickly fall behind. I did not want to be one of those “has beens,” who did not know when to quit but who showed up at professional conferences, making comments or presentations that reflected yesterday's understanding of whatever issue was being discussed.

But I did not honor the commitment I had made to myself, to get out of anything related to food policy. As mentioned in the prologue, I had also made a commitment to myself to do everything I could to help reduce malnutrition, food insecurity, and associated child death. Very soon after I retired from Cornell University, I accepted a position as Adjunct Professor at Copenhagen University, a position I still hold. Although the appointment included no commitments on either side, it gave me an institutional home, particularly, if or when Birgit and I decided to move to Denmark. In the meantime, I decided to spend less than the 2–3 hours a day to stay current, that I had spent before, and instead try to keep up on only one topic—using health and nutrition goals to guide agricultural policies and projects—and then to pursue new promising

food policy topics for which little past work had been done. I also accepted invitations to take on things of interest to me and for which I believed my knowledge would suffice. Some of these things are mentioned here.

### **Using health and nutrition goals to guide agricultural policies and projects**

I continued to write and give oral presentations in both English and Danish about the future global food situation and how to design and implement food, agricultural, and economic development policies and projects for better nutrition. I was particularly concerned about the widespread use of calorie intakes as an indicator of food security. Therefore, I suggested that a healthy diet be used as a goal instead of as an indicator of food security. Lack of certain macronutrients and micronutrients, together with excess intake of calories, was and continue to be widespread, contributing to rapidly increasing obesity and continued high levels of micronutrient deficiencies. I argued to no avail that agricultural research priorities should be changed from yields of calories to yields of nutrients per unit of land or water. I also suggested that widespread urban micronutrient deficiencies could be alleviated by vertical, indoor production of vegetables in urban and semi-urban areas, while also expanding greenhouse and open field production of nutrient-dense foods and eliminating urban food deserts. I continued to promote the use of modern science, including genetic modification and CRISPR. It is highly unlikely that these efforts have had any impact whatsoever. Food security, measured in calorie intake, was still misused as a measure of a healthy



diet, and success in agricultural research was still measured as tons of grain or other calorie-dense commodities per unit of input, while no substantial increase in vegetable production and consumption occurred. An invitation to join a subcommittee on food systems and human health of the US National Academy of Sciences' Board on Global Health gave me an opportunity to work with a multidisciplinary group to develop recommendations for strengthening positive and reducing negative impacts of food systems on human and environmental health, using a "One Health" approach.

### **New ideas show great promise for improved nutritional health and sustainability**

Production of vegetables in tall buildings with artificial light, no soil, no pesticides, very little water and totally controlled environments sounded like a pipe dream only a few years ago and was rejected by many on economic grounds and because it was considered unnatural. However, as I became aware of recent technological developments in the use of artificial lighting, large price falls for LED lighting, and rapidly increasing evidence from existing pilot and commercial production units, I began to wonder whether vertical indoor vegetable production was becoming a viable option for reducing micronutrient deficiencies in urban areas. I continued to read anything I could find on the subject and went to a couple of workshops organized by venture capitalists. When I thought I had enough knowledge to justify an article, I wrote one for the journal of *Global Food Security*, and I gave oral presentations in various places, including Vancouver and

Copenhagen, to promote an evidence-based debate. Clearly, there was a need for more research, but I felt that past rejection of indoor vertical production of vegetables should be replaced by experimentation and an open mind. It appeared to me that a case could be made to reallocate many countries' large agricultural subsidies for grains and other calorie-dense food commodities to vertical production of nutrient-dense foods in urban areas. Unless, of course, policymakers still believed that more and cheaper calories, rather than affordable, healthy diets, are the goal of food and agricultural policies.

The large number of vertical indoor production units in Japan, Singapore, and South Korea indicated to me that the economic tipping point was near, although I was fully aware that government subsidies were involved. As I write this, the first Danish large-scale vertical food production unit is being built. Fourteen floors of growing space are being designed to produce vegetables for the Copenhagen market. The unit is placed in the outskirts of the city, thus reducing the distance to the consumers. I have visited the unit twice, participated in a panel discussion, and contributed to two articles in Danish papers.

An increasing number of articles are being published on vertical agriculture, and the international debate is turning more positive. More research is being done on production practices in controlled environments. This includes how best to use LED lighting and how to tailor the products to meet consumer demands. However, most of the research is done by the private sector on the basis of funding from

various nongovernmental funding entities. Universities and other publicly funded research institutions are showing little or no leadership on this topic.

### *Alternative nontraditional food sources*

Building on my past research and writings on food systems, I began to explore whether alternative food sources might be helpful to achieve diversified and healthy diets and reduced emission of greenhouse gases. I began learning about edible insects, seaweed, sardines, and a large number of orphan crops and animals. Replacing animal source foods with plant-based foods was another topic of interest to me. I started eating freeze-dried mealworms and crickets and carried them for distribution when giving presentations. I supported crowd-funding for “Wholi,” a small start-up focusing on the development and sale of insect-based foods.

### **Activities of interest and potential impact**

#### *The High Level Panel of Experts*

The High Level Panel of Experts on Food Security and Nutrition (HLPE) was created as part of a reformation of the UN Committee on World Food Security (CFS) in 2009. HLPE’s purpose was to generate “credible scientific and knowledge-based advice to underpin policy formulation, thereby creating an interface between knowledge and public policy.”<sup>6</sup> The members of the HLPE were nominated and chosen by CFS member

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<sup>6</sup> HLPE 2011. Price Volatility and Food Security. Rome, 2011.

countries. The HLPE members chose the chair at their first meeting. M. S. Swaminathan was the first chair, a position he held from 2011 to 2014. At that point, USAID nominated me. I was selected by the CFS member countries and chosen by the HLPE members to be chair, a position I held during 2015–17.

The HLPE Secretariat was hosted by FAO, and while the Secretariat staff was excellent, FAO placed rather constraining conditions on our work, particularly, our ability to promote HLPE findings beyond the CFS. My impression was that FAO wanted the HLPE to be—and be seen as—a backroom service entity for CFS only, and unknown to the broader food policy community. Based on my earlier experience with FAO, as chair of the CGIAR Science Council and as DG of IFPRI, I was wondering whether jealousy, fear of competition, turf protection, or just power play might be involved. I never found out, but I lost the opportunity to promote HLPE and its reports outside the CFS. However, the members of HLPE were outstanding professionals with much knowledge about food and nutrition policy, and I was frustrated about the lost opportunities associated with keeping the HLPE reports in the dark.

Before I joined, six excellent HLPE reports had been produced, and two more (sustainable fisheries and food losses) were completed during my tenure. All eight reports focused on very timely and important food security topics and contained a lot of knowledge, which could have been used to guide public policy both within and outside the CFS. Unfortunately, they remained virtually

unknown outside CFS. In spite thereof, I am convinced that HLPE has been successful in its ability to make available solid and enlightened evidence in support of CFS's work. I enjoyed working with a highly qualified and motivated groups of people but informed USAID that I did not want to be renominated.

*Senior advisor to the World Bank and the Eurasian Center for Food Security*

Artavazd Hakobyan, a World Bank staff member supporting the development of the Eurasian Center for Food Security (ECFS), had become interested in the use of the case study approach developed for teaching at Cornell to be used for food policy research in the Eurasia countries. He offered me a consultancy as Senior Advisor to help introduce and manage case studies relevant for current food policy issues in the region. During the two years of my consultancy, 14 case studies were produced and finalized in English and Russian. The fifth set of case studies has just been initiated. On the assumption that 6–7 case studies were produced annually for the first four years and another 6–7 will be produced during 2021, the effort has made a very significant contribution to the knowledge about food policy in the region.

Artavazd also asked me to suggest priorities for food and nutrition policy research for the region. Given my limited knowledge about the region and its food, nutrition, and agriculture, that request put me on a very steep learning curve. I reviewed whatever relevant literature I could get my hands on, consulted individuals within and outside the region, and analyzed what I found on the basis of

whatever knowledge I had from food policy research elsewhere. It was with considerable trepidation I presented the suggested priorities paper at the Annual Eurasian Food Security Conference in Dushanbe, Tajikistan, in 2017. However, the reception was positive, either because the audience thought the priorities made sense or because the participants were diplomatic. In any case, I learned a lot, and I believe the paper served to help guide future case studies. Several case studies presented by the case authors at the Conference also received a favorable audience response.

One final activity, related to Central Asia, I want to mention, is the creation of an ECFS Program Advisory Committee. Its purpose was to advise the ECFS, the World Bank, and Moscow State University, the host institution for ECFS, regarding current and future ECFS priorities and activities. It was a small five-person group, with me as the chair. Our first meeting went well and resulted in a report, which I believe was useful to the aforementioned three clients. Unfortunately, the second meeting fell apart, mostly because two of the five members were unable to attend. This, together with the lack of complete enthusiasm about the need for an advisory committee among the clients, killed the Committee. As chair of the Committee, I take the blame for the failure. I failed to successfully apply a political economy approach and take intercultural differences into account. The Committee was seen as a threat by some, even though it was advisory and not steering.

### *Youth institutes*

I have admired the contributions made by the Global Youth Institute since it was created by the World Food Prize Foundation. In addition to periodic interactions with the students at the annual conferences in Des Moines, I was fortunate to contribute to the New York Youth Institute under the leadership of Francine Jasper. I also had the opportunity to interact with the newly created Dutch Youth Institute at Wageningen University under the leadership of Mirjam Troost. I did not succeed in convincing Copenhagen University to create a Danish Youth Institute.

### *World Expo 2015*

The World Expo is held every five years. The host city is selected by a Paris-based organization through fierce competition. Milan was competing to be the host city for World Expo 2015, which was given the title “Feeding the Planet, Energy for Life.” I was invited to participate as a consultant to help with the design and content of the substance. I attended a couple of meetings in Milan, gave presentations, and made suggestions. Then came the most interesting and enjoyable part: the visit by the group deciding which of the competing cities would be chosen. The visit began in Rome, and all stops were pulled. I was privileged to be included in the activities planned for the visiting group. We ate at Rome’s best restaurants, got the full tour of the Vatican, and were treated as VIPs all the way (I was just invited to hang on and say a few supporting words about the importance of feeding the planet). Why the visitors were invited to Rome instead of

Milan was never clear to me, but Milan won the competition, and I subsequently visited the Exhibit in connection with participating in the conference of the International Association of Agricultural Economists.

### *Other activities*

I was invited to help with the creation of a new international organization on antimicrobial resistance (International Center for Antimicrobial Resistance Solutions, or ICARS) to be placed in Copenhagen. After a couple of meetings and comments on various drafts, the organizers became involved in the management of COVID-9, and my interactions were put on hold.

I continued to accept invitations to give oral presentations on a pro bono basis, as long as I found the topic interesting and travel expenses were covered. An invitation to give a presentation at the 2<sup>nd</sup> International and 14<sup>th</sup> National Iranian Crop Science Congress at the University of Guilan, Rasht in September 2016 stands out in my memory. I had never been to Iran, and the visit gave me an opportunity to become more familiar with Iranian agriculture and agricultural sciences. A few days of tourism gave Birgit and me an opportunity to visit several Iranian cities and observe the tremendous artwork. Several commitments for presentations scheduled for 2020, involving international travel, were either cancelled or postponed because of the threats from COVID-19.

My interest in the Millennium Development Goals translated to an equal interest in their replacement, the Sustainable Development Goals (SDGs), but it was not until we



moved to Denmark (2017), that I became motivated to try to promote activities for their achievement. I was surprised by the widespread knowledge of the SDGs in the Danish public and their frequent mention in the debate, something I had not experienced in the United States. It appeared that both the private and public sector was ready to redesign their action in the context of the SDGs, thus joining a large segment of civil society. So, my plan was to write a couple of articles with emphasis on the importance of achieving SDG2 for both Denmark and developing countries and spread the word that I was willing to give oral presentations to interested groups. Due to the COVID-19 pandemic, the plans did not materialize.

One of my concerns was that since the SDGs were for all countries, including Denmark, and not just for developing countries, as was the case for the MDGs, Denmark would just focus on achieving the SDGs for Denmark, leaving developing countries to their own devices. As it was beginning to take off, COVID-19 turned up. Presentations planned for 2020 were cancelled or postponed, and concerns about the virus forced the SDGs out of the debate. Policymakers no longer talked about how to achieve the SDGs. Neither did the private sector. Although the COVID-19 pandemic and political interventions to limit its spread caused horrible disruptions in the lives of poor people in developing countries, with massive increases in the prevalence of hunger, malnutrition, and death, the Danish government did virtually nothing to help. In fact, the government announced that Danish development assistance would decrease because the Danish GNP would decrease, and the government would maintain the level of

assistance at 0.7 percent of GNP. At the same time huge amounts of public money were pumped into the Danish economy. As the concerns about the virus withered a bit, some attention to the SDGs resurfaced, but exclusively focused on what should be done in Denmark. A report published in September 2020, recommended 197 things to be done, all sharply focused on Denmark. Nothing on how to help reduce the immense suffering in developing countries.

Before ending this chapter, I want to mention David Sahn's initiative to arrange a Festschrift and an associated two-day seminar in my honor. David approached a select group of my close associates and friends, inviting each of them to write a paper about some aspect of food policy that related to what they and I had worked on. The papers were presented at a two-day workshop at Cornell in December 2013. and published in a book edited by David. Interacting with this group of professionals and friends, for whom I had great respect and admiration, during the two days, was an immense pleasure for me and something for which I am extremely grateful to David for organizing. The papers were excellent, and I believe the book got a wide distribution.

### **What is next (2021 onward)?**

Even though the book ends in 2021, I hope to continue my journey into food systems. At the time of completing the book manuscript, I expect to continue the collaboration with ICARS mentioned previously and to respond favorably to any invitations for presentations about SDGs and related issues. I will also continue my work on the

interaction between food systems and human health, initially through a multidisciplinary team of researchers under the auspices of the US National Academy of Sciences, One Health Collaboration initiative. I will also try to “think outside the box,” with focus on innovative changes in food systems, such as vertical food production and alternative food sources, such as edible insects, seaweed, synthetic meats, and other foods and orphan crops, to promote healthy diets. I may seek more evidence about the energy balance in the agricultural sector, including the allocation of agricultural land to solar cells and wind energy. I may decide to enter into the debate about plant vs. animal-based food systems.

I have now come to the end of the 11 chapters, each focusing on a particular time period. The next chapter will provide a brief overview of my research.

## **Chapter 12**

### **Brief Overview of My Research and Written Output (1961–2021)**

As shown in the list of publications in Appendix 2, my written output covers a broad spectrum of topics related to food and agricultural systems. The output is based partly on my own research and partly on results from research by others, as well as statistical information from various sources. The output falls into 10 areas of work briefly summarized below. My research is best characterized as applied empirical research to generate new knowledge about food systems. Some of the work is probably best described as translational research, because it aims to develop specific recommendations for action, based on evidence generated by basic and applied research. Many of the writings include recommendations and advocacy for action, always based on evidence. A large share was focused on estimating associations or causal relationships between various kinds of policy action and key indicators of the food system outcomes, such as agricultural production and marketing efficiencies, household food security, human nutrition, and health. Most of the research has attempted to generate new knowledge about the behavior of consumers, producers, traders, governments, and other food system agents.

The focus of my research and written output has changed over the years from agriculture and food supplies through consumption, nutrition, and health aspects to political economy issues. All of my work related to food systems.

The choice of topics for research reflects both my professional interests and my job responsibilities, with emphasis on work that I perceived might have the greatest impact on the well-being of disadvantaged people in developing countries. As interests and job responsibilities have changed, so have my research priorities.

The rest of the chapter is organized in 10 major areas of output, cutting across the 450 books, articles, and papers listed in Appendix 2. Copies of all the publications mentioned are available in my personal library.

### **The economics of agricultural research and technology**

The importance of agricultural research in achieving food security and good nutrition has played a major role throughout my work. Initially, I aimed to assist agricultural researchers in setting priorities for their work by identifying the major researchable problems facing farmers and consumers, estimating the probabilities of solving these problems, the likelihood that the solutions would be adopted by farmers and accepted by consumers, and the impact on farmer incomes, consumer prices, and in some cases, on human nutrition. The analytical methodology, as well as results from the empirical work, were disseminated directly to researchers, and in a variety of papers, I was invited to present in various countries and at international conferences. A workshop and a resulting book jointly organized and written with Francis Byrnes, and a chapter written with David Franklin, in a book on resource allocation, edited by Vernon Ruttan, probably reached the largest number of agricultural researchers and research

managers. An article published in the *American Journal of Agricultural Economics* was intended to reach agricultural economists and food system analysts.

In the context of these publications, it may be useful to mention a feasibility study of high-lysine maize that turned out to be particularly timely and effective in influencing the debate and decision-making.

Other work included estimates of the distribution of benefits from agricultural research, including the Green Revolution, published in various papers and articles. To try to tie it all together, I wrote a book on *Agricultural Research and Technology in Economic Development*, published in English and Danish. Almost 20 years later, I wrote a book on the role of genetic modification in food and agriculture, this one with Ebbe Schiøler. Although it was far from being a best seller, it did get considerable attention. It was written in Danish and translated into several languages, and I believe it may have influenced both the debate and the subsequent action, but I have no proof. I followed up with a rather large number of papers and presentations on the subject of GMOs for developing country agriculture. Although I tried to make sure that anything I said or wrote was evidence-based, there was clearly some advocacy involved. I felt strongly—and still do—that much of the opposition to the use of genetic modification was based on misinformation and ideology to the detriment of poor and hungry people in developing countries.

## **Agriculture, food systems, nutrition, and health**

My work on nutrition began with the previously mentioned inclusion of nutrition into my work on priority setting in agricultural research. How would the agricultural research portfolio look if the goal was to have the greatest positive impact on human nutrition? This was a question that few had asked during the late 1960s and early 1970s, and fewer had done any research on it. Most agricultural development experts, agricultural researchers, and nutritionists did not think the question had any merit, but the few who did became very interested in how to use such new evidence. Alan Berg at the World Bank was one such person. After he saw my article in the *AJAE* and a few other papers I had written on the subject, he invited me to help him find a way to incorporate nutritional goals into Bank projects. Working with Alan resulted in various outputs, including a Bank report on the subject. We then proceeded to undertake work on how the international agricultural research centers could incorporate nutrition into their priority setting. That work resulted in a workshop in Addis Ababa and a book edited jointly with Alan and Martin Forman at USAID.

I followed up with empirical analyses of the nutritional effects of cash and export crop production in several developing countries and related policy recommendations. This was completed with colleagues at IFPRI. I subsequently focused on how to alter food systems for better nutrition and human health. This work resulted in an excessive number of flow diagrams, many papers, and presentations and little or no action. Following the large

food price increases in 2007–8, the field became very crowded. It seemed that every food policy analyst and development assistance agency suddenly wanted to change agriculture and food systems for the benefit of nutrition. The number of workshops, conferences, flow diagrams, and papers mushroomed, but as far as I can see, the resulting action to improve nutrition and health was rather limited.

I joined the rapidly increasing global concern about obesity, micronutrient deficiency, and unhealthy diets, in general, resulting from past and ongoing emphasis on producing and consuming more and cheaper calories. I became more interested in urban agriculture. In particular, because of rapidly falling prices for LED lighting and increasing efficiency, coupled with increasing micronutrient deficiencies in urban areas, vertical production of vegetables in or close to urban areas appeared to be on the way to becoming economically viable. Increasing concerns about water scarcity, and CO<sub>2</sub> emission from transportation of food over long distances, added to my impression that the time had come to take vertical farming seriously. I tried unsuccessfully to get data from existing and bankrupt vertical production units for economic analysis. Unfortunately, such data were considered confidential. Instead, in an attempt to draw attention to the matter, I wrote a couple of articles and gave various presentations about the pros and cons of vertical vegetable production. As I write this (the beginning of 2021), venture capitalists, innovators, and other risk takers are moving ahead with investments in production units, but it is my sense that the large majority of food policy analysts



and others interested in food systems believe it is uneconomical, unnatural, or just a pipe dream.

Additionally, I wrote a textbook on food policy and nutrition, co-edited a book on nutrition and development with Margaret Biswas, and edited a book on African food systems and nutrition.

### **Agricultural marketing, value chains, and trade**

As mentioned earlier, during my undergraduate studies, my interests changed from animal husbandry to agricultural marketing, and when the time came to write my BS thesis, I selected “Japan as a Market for Danish Food Commodities.” My findings, published in *Tolvmands blad*, indicated very promising opportunities for Danish export of animal products to Japan, opportunities that became reality in the subsequent years. My next marketing analysis was about the US beef market. The findings of that work were also published in *Tolvmands blad*. I also analyzed and wrote articles about scale economies in US agricultural processing companies and vertical integration in US agriculture. I later returned to marketing in the context of value chains and how they converted agricultural commodities into food products available to consumers. In this work, I was particularly interested in how to change the activities by the food processing industry from producing unhealthy ultra-processed foods with a high content of sugar, sweeteners, fat, and salt, and low on micronutrients and fiber, to the production of healthy foods, high in nutrients and low in calories.

My work on international trade included the impact of trade liberalization on food security and nutrition and the editing of a book on Agricultural Trade Liberalization and the Least Developed Countries, with Niek Koning.

### **Food price policy, subsidies, cash and food transfer programs, and nutrition programs**

During the 1980s, consumer food subsidies were widespread in developing countries. Given the large fiscal burden in some of the countries such as Egypt and large variations in their effectiveness, there was an urgent need for better evidence about how to design and implement the subsidies. In response to this need, I undertook a large multi-country study. The study was designed to produce country-specific evidence for use by study-country governments, as well as international public goods-type evidence of use by governments in other countries. Empirical studies were carried out in nine countries, in collaboration with national policy analysts, government agencies, and universities. Results from these studies were synthesized to produce evidence of an international public goods type. The results from both country-specific studies and syntheses, together with policy recommendations about targeting and a variety of other design and implementation elements, were published widely, including in the book, *Food Subsidies in Developing Countries*.

An experiment in the Philippines went beyond the study. Two similar areas of the country were selected. A food subsidy program was implemented in one of the areas, and both were monitored during an extended period of time. The results, which showed very positive effects of

subsidies on food security, were used by the government in its subsequent food policy.

In addition, I undertook research on various program and policy approaches to food and cash transfers and food price policies. Gender issues were included in many analyses, and a few papers focused specifically on those issues, as they related to food security. I worked with Chinese colleagues on a large data set of food consumption collected by the Chinese State Statistical Bureau from a large number of households over long periods of time. The work consisted primarily of the estimation of price and income elasticities. I edited a book on *Child Growth and Nutrition in Developing Countries* with David Pelletier and Harold Alderman. The book, which was published by Cornell University Press and republished in India by Oxford University Press, focused on priorities for action and came about in response to our frustration over the lack of effective utilization of existing evidence to reduce child mortality and malnutrition. I wrote another book, this one with Eileen Kennedy, on *Nutrition-related Policies and Programs: Past Performance and Research Needs*. As indicated by the title, the purpose of this one was to help set priorities for future food and nutrition policy research.

### **Globalization, macroeconomic policies, and structural adjustment**

The links between globalization and food security and nutrition played an important role in my teaching and oral presentations since the 1990s, but I wrote only a few papers and no books on the subject. A chapter in my

textbook for food policy provided an overview. A larger share of my work on macroeconomic policies was published, including a book entitled, *Macroeconomic Policy Reforms, Poverty, and Nutrition: Analytical Methodologies*, and various papers. I also did work on macroeconomic adjustment policies in collaboration with UNICEF. Estimates of how the EU and US agricultural subsidies affected developing countries and their small-holder farmers were used in the interaction with the news media, at conferences, and in meetings with policymakers, but my writings on the subject was rather limited.

### **Political economy, governance, and conflicts**

My largest political economy research project was that mentioned earlier, which I did in collaboration with WIDER and colleagues in several countries. My research on national conflict and international instability focused on the causal link between food security and other human misery, on the one hand, and conflict and instability, on the other. My work was based on existing data and evidence, and I did not do any new empirical studies. Similarly, my work on the political economy aspects of land grabbing, and its impact on poor farmers, was more conceptual than empirical. A journal article on the subject was widely cited. As my research on household behavior, mentioned earlier, matured, I began to see a clear similarity between the behavior of governments and households. In both cases, I felt that a political economy approach might yield a better understanding of both and help to identify policy interventions that might meet the priorities

of both government and household. I argued this in a few papers and presentations, but it did not catch on.

Analyses related to governance played an important role in my aforementioned work at HLPE, but most other governance work was cast as policymakers' decision-making processes, as part of various papers. Based on the papers prepared for and presented at a workshop, I edited a book on *The Political Economy of Food and Nutrition Policies* and wrote a chapter summarizing the content.

## **Ethics**

My research on ethics was conceptual and based on existing evidence but focused on policy for food security and nutrition. An article in the *American Journal of Agricultural Economics* received significant attention, primarily, I believe, because it was a theme not common in the agricultural economics literature. Peter Sandøe and I organized a workshop and published a book with the papers presented. Other than that, I wrote a few papers, gave a few presentations, and wrote a chapter on the subject in my textbook.

## **Natural resource management, sustainability, climate change, energy, and fertilizers**

My work on natural resource management is limited to a few articles with Rajul Pandya-Lorch and integral components of a variety of papers on the global food situation. I did no empirical research on climate change or energy. A submission to a prize competition issued by the Nordic Society of Agricultural Researchers and Norsk Hydro

won the prize. It was subsequently published as a book in Danish with the title, *The Importance of Fertilizers for the Food Supply*. Other than that, my work on fertilizers was limited to a few papers and presentations. I did no empirical research on water, soil, or biodiversity.

### **Global and regional food supplies and demand**

My papers and presentations on the food situation were mostly based on research done by others, including Mark Rosegrant's work on IFPRI's International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) model and estimates based on secondary data from FAO, the World Bank, and other organizations. I did no real research on this topic, but spent a lot of time talking about it.

### **Development assistance**

My work on development assistance included the estimation of the value of food aid to recipient countries, relative to other types of aid and the opportunity costs to donor countries, as well as the efficiency of food aid relative to other aid in promoting economic growth in recipient countries. That was my PhD dissertation. Subsequently, I analyzed donor benefits from foreign aid and estimated how the nutritional benefits from food aid could be enhanced by changing the commodity composition of the aid.

## **Chapter 13**

### **Brief Overview of My Teaching and Training Activities (1961–2021)**

Most of my teaching and training activities are mentioned in Chapters 2–11. This chapter provides a sequential overview. My first formal teaching experience goes back to 1968, when the head of the Agricultural Economics Department at Oklahoma State University promoted me from graduate research assistant to instructor and asked me to teach a rather large agricultural marketing course for undergraduates. In my own assessment, it went well. Student comments and evaluations ranged from good to excellent. I had no problems with any of the students. My self-esteem, with respect to teaching abilities, went a bit up the scale but from a very low level. That was it for university-level teaching for a while.

My next teaching assignments were for short-term training programs at CIAT. To remedy my total lack of Spanish, CIAT arranged for language classes for me. A couple of hours in the morning and another couple of hours in the afternoon. Extremely efficient one-to-one teaching, and after about three months, I began teaching training courses in Spanish. The subject was, of course, economics related to agricultural development.

After a short stop (less than two years) at IFDC with no formal teaching responsibilities, I moved to the Royal Veterinary and Agricultural University (KVL) in Denmark, initially as a Senior Research Associate with no teaching obligations. That changed when I was promoted

to Associate Professor and taught an undergraduate course in food and agricultural economics for a couple of years, until I left for IFPRI in 1980. During the seven years I worked in IFPRI's food consumption program, I gave a large number of presentations and single lectures at various places but taught no formal courses.

I moved from IFPRI to Cornell University in 1987, and since I was responsible for bringing in funding not only for myself but also for the Nutrition Surveillance, and subsequently, CFNPP, along with a heavy dose of overhead for the University, I had no teaching and student advisory obligations. However, I quickly learned that if I wanted to get integrated into the University, I had better teach, supervise, and interact with students in whatever way feasible. So, I developed a course in what else but food and nutrition economics and policy. That was approved by the University, and I taught it until I went back to IFPRI in 1992.

During the 10 years as DG of IFPRI, I gave many presentations, keynotes, guest lectures at universities, and elsewhere but taught no formal courses. After completing my tenure at IFPRI, I accepted Cornell University's offer to come back, this time as Babcock Professor. As discussed in Chapter 10, I developed two new courses, one on food policy for advanced undergraduates and graduate students, and another on globalization, poverty, food security, and nutrition for graduate students. I developed a teaching approach based on case studies, which I used in the first mentioned course. I also used the approach, which is described in detail in Chapter 10, in the short courses I



taught at KVL during the summer sessions and a few other places. The course description and more than 100 cases have been freely available on the web, since they were developed, but I never monitored their use. I organized training sessions to promote their use in Asia and Africa, and I used cases to support research in Central Asia. Forty of the cases were translated to Chinese by Nanjing Agricultural University and published in book form for use at Chinese universities, but I have only anecdotal information about their use at other universities.

## **Chapter 14**

### **Brief Overview of My Communications Activities (1961–2021)**

My communications activities have aimed to reach various potential clients in the public and private sector, including policymakers, food policy analysts, the news media, NGOs, and the agribusiness sector. I have tried to tailor both content and approach to the group(s) I wanted to reach but with varying success. Most of the books, book chapters, journal articles, and papers listed in Appendix 2 were directed at policy analysts and advisors, students and others interested in food systems. Many of the papers were in support of oral presentations. Other presentations were based on PowerPoints or presented “*a cappella*.” I accepted invitations to speak at universities, workshops, conferences, church groups, and civil society groups.

During my time as DG of IFPRI, and particularly, after receiving the World Food Prize, I received many more invitations than I could accept. The director of the Communications Division tried to guide me toward those expected to have the greatest impact, but I am afraid my choice of invitations to accept looked a bit like a shotgun approach. I have used a variety of other communication vehicles to transmit evidence about how to improve food security, nutrition, and human and environmental health. As part of the 2020 Vision Initiative, we emphasized short policy briefs, and we expanded collaboration with the news media (newspaper articles, op-eds, TV, radio and newspaper interviews and press briefings) as vehicles to

transmit evidence and recommendations to policymakers and advisors in both developing and high-income countries. I expect that some of this material also reached the general public. Speaking at Congressional hearings was a potentially useful vehicle to reach policymakers and advisors in the United States. YouTube and other Internet-based vehicles, as well as blogs, were used to try to reach the general public.

Did these communications effort have any impact on food security, diets, nutrition, child health, or the environment? I do not know. I believe more evidence was transmitted into the thinking, debate, and policy considerations, but I have no proof that more informed thinking, debate, and policy consideration translated into more healthy diets, less food insecurity, and a more sustainable management of natural resources. Hopefully, those who selected me for the World Food Prize, the Charles A. Black Award, the Rosenkjær Prize, and other recognitions for my communications efforts have more evidence, but maybe these recognitions were for my effort rather than the impact on the well-being of the intended beneficiaries. In any case, I am grateful for the recognitions.

## **Chapter 15**

### **The Bottom Line**

My journey through food systems has been exciting and disappointing for me. Exciting, because I have been privileged to work on what was—and still is—of great interest to me. I have experienced a life of learning. I have confronted several steep learning curves, and they have all enriched my life. So has the opportunity to interact and work with so many outstanding and dedicated individuals, with common goals. Instead of repeating one year of experience close to 70 times, as a routine job might have offered me, I have gained close to 70 years of experience. I have learned a lot about food systems. I have learned to absorb new knowledge from people more knowledgeable than me and communicate new knowledge to others, including policymakers and students. Did it make a difference to those less privileged than me? Did anybody escape poverty, malnutrition, poor health, or premature death because of what I have done? Are natural resources in better shape because of my work? Did society's investment in me pay off, and if so, for whom? The frustrating thing is that I do not have answers to any of these questions.

So why the disappointment? Because it is clear that the goal of a healthy diet for all, which I hopefully contributed to, has not been achieved. Every year, malnutrition and related causes continue to bring about widespread suffering and death among children and adults. The prospect of a world without malnutrition and related human misery appears more and more as a distant mirage.

So does Sustainable Development Goal 2. There is so much more to be done and so little time.

Did I contribute to the knowledge about how to do it? Yes, I believe I did. Probably my main contribution was to improve the understanding about the likely causal relationship between action and impact on food security, diet, nutritional status and human health, particularly action by policymakers. I believe I contributed to a better understanding about the food-system related behavior of policymakers, households, and individuals. I believe my communications activities improved the understanding of food systems and food policy among students, policymakers and many others. Unfortunately, these are all beliefs. I have no proof. But even if these beliefs are correct, does it matter? Is better evidence of the kind I produced and communicated to decision-makers really what is needed to assure a healthy diet for all and achieve Sustainable Development Goal 2? Is lack of knowledge about how to do it the most binding constraint? Or is it all about power, greed, and lack of empathy among the powerful, and, if so, do they already have the evidence needed but purposefully fail to use it? Have I been blinded by the many recognitions and rewards I have received and my many papers, books, and presentations to think that all this mattered to the people I pretended to help? Have I been just an actor in a rigged and deathly game?

# Appendix 1

## My Curriculum Vitae (January 2021)

**NAME:** Per Pinstруп-Andersen  
**TITLE:** Professor Emeritus, Cornell University  
Adjunct Professor, University of Copenhagen

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**CASE WEBSITE:** <http://cip.cornell.edu/gfs>  
**TWITTER:** @Pinstруп7

### EDUCATION

<u>Year</u>	<u>Degree</u>	<u>Institution</u>
1969	PhD	Oklahoma State University
1967	MS	Oklahoma State University
1965	BS	Royal Veterinary and Agricultural University, Copenhagen

### AREAS OF EXPERTISE (key words)

Food policy; political economy, agricultural economics; food and nutrition policy; agricultural research and technology policy; globalization and nutrition; food systems; research; policy advice; university-level training; social entrepreneurship

### PROFESSIONAL EXPERIENCE

<u>Year</u>	<u>Positions</u>
June 1, 2013 – Present	<b>Professor Emeritus</b> , Division of Nutritional Sciences and the Dyson School of Applied Economics and Management, Cornell University, Ithaca, NY

January 31, 2003 – May 31, 2013	<b>H.E. Babcock Professor of Food, Nutrition and Public Policy</b> in the Division of Nutritional Sciences, Cornell University, Ithaca, NY
April 21, 2003 – May 31, 2013	<b>International Professor of Nutrition Economics and Policy</b> at the College of Agriculture and Life Sciences, Cornell University, Ithaca, NY
June 13, 2003 – May 31, 2013	<b>Professor of Applied Economics</b> , Dyson School of Applied Economics and Management, Cornell University, Ithaca, NY
July 1, 2006 – May 31, 2013	<b>J. Thomas Clark Professor of Entrepreneurship</b> in the Entrepreneurship@Cornell Program
January 1, 2012 – Present	<b>Adjunct Professor</b> , University of Copenhagen
January 1, 2003 – October 1, 2010	<b>Professor of Food Economics</b> at University of Copenhagen
March 2001 – December 2007	<b>Distinguished Professor</b> , Wageningen University, The Netherlands
September 2002 – December 2002:	<b>Senior Research Fellow</b> of the International Food Policy Research Institute (IFPRI), Washington, DC
July 1, 1992 – September 2002	<b>Director General and CEO</b> of the International Food Policy Research Institute (IFPRI), Washington, DC

February 1987 – June 1992	<b>Professor of Food Economics</b> in the Division of Nutritional Sciences and <b>Founding Director of the Cornell Food and Nutrition Policy Program (CFNPP)</b> , Cornell University, Ithaca, NY
April 1980 – January 1987	<b>Research Fellow</b> and from September 1, 1980, <b>Director of the Food Consumption and Nutrition Policy Research Program</b> , International Food Policy Research Institute (IFPRI), Washington, DC
November 1977 – March 1980	<b>Senior Research Fellow</b> and <b>Associate Professor, Economic Institute</b> , The Royal Veterinary and Agricultural University, Copenhagen
February 1976 – October 1977	<b>Director of the Agro-Economic Division</b> , International Fertilizer Development Center (IFDC), Florence, AL
May 1969 – January 1976	<b>Agricultural Economist</b> , with Centro Internacional de Agricultura Tropical (CIAT), Cali, Colombia. Head of the Economics Unit from April 1, 1972.
September 1966 – April 1969	<b>Research Assistant</b> and from August 1968, <b>Instructor</b> in the Department of Agricultural Economics, Oklahoma State University
Pre-university:	Farmworker on various Danish farms, research assistant, and a milk tester during a period of six years prior to entering the University. During 1958–59 served in the Danish Army.



## HONORS AND AWARDS

### Honorary Doctorates:

- Doctor of Science (*honoris causa*). University of Florida, April, 2010
- Doctor of Agricultural and Environmental Sciences (*honoris causa*). Wageningen Agricultural University (The Netherlands), March 2000
- Doctor of Science (*honoris causa*). Tamil Nadu Veterinary and Animal Sciences University (Tamil Nadu, India), April 1999
- Doctor of Laws (*honoris causa*). University of Aberdeen (Aberdeen, United Kingdom), July 1999
- Doctor of Technical Sciences (*honoris causa*): Swiss Federal Institute of Technology (Zurich, Switzerland), November 1996

### Other Honors/Awards:

- Recipient, Dr. Clifton R. Wharton Emerging Markets Annual Award, Charles H. Dyson School of Applied Economics and Management, 2012
- Listed on SSRN's top ten download list for "Food Industry eJournal and SRPN: Food Production," for paper on "Food Production, Population Growth, and Environmental Security"
- Selected by Miriam Goler, a Merrill Presidential Scholar, as the faculty member who has made the most significant contribution to her education while here at Cornell, 2009
- Designated by an independent panel commissioned by the Danish newspaper *Udvikling (Development)* as the Dane who has had the greatest impact on global poverty reduction, 2009
- Fellow, Cornell Center for a Sustainable Future, 2009–16
- Recipient, 2008 Outstanding Faculty/Staff Award, College of Agriculture and Life Sciences
- Recipient, Honorary Alumnus Award, Copenhagen University, August 2008
- Recipient, Danish Radio's Rosenkjaer Prize for Policy Communication, November 2002
- Recipient, AAEA Distinguished Policy Contribution Award, July 30, 2002

- Recipient, Horticológico de Honra, given by the Portuguese Horticulture Association, October 12, 2001
- Recipient, 2001 World Food Prize for contribution to the improvement of agricultural research, food policy, and the lives of the poor
- Fellow, American Association for the Advancement of Science (AAAS) since October 1997
- Fellow, American Agricultural Economics Association (AAEA) since August 2000
- Agronomprisen 2000, Danish Society of Agricultural Professionals, March 2000
- Distinguished International Alumni Award, Oklahoma State University, November 20, 1998
- 1998 Charles A. Black Award for outstanding record of research and communication, awarded by the Council for Agricultural Science and Technology (CAST) on March 20, 1998
- 1996 Best Paper Prize for article in the journal *Environmental Conservation*, awarded by the Foundation for Environmental Conservation, Geneva, Switzerland
- Honorary member, International Association of Agricultural Students (IAAS) since July 1997
- Distinguished Alumnus, Economics Institute, University of Colorado since 1993
- Certificate of Merit for excellence in research from Gamma Sigma Delta [1991]
- Winner of Prize Competition issued by the Nordic Society of Agricultural Researchers and Norsk Hydro on the topic "The Importance of Fertilizer for the World Food Supply" [1979]
- Outstanding Journal Article Award from American Agricultural Economics Association [1977].
- PhD Thesis Award from American Agricultural Economics Association [1970]
- Honorary member of the Colombian National Organization of Professionals in Agriculture since 1973
- International Who's Who of Professionals
- Strathmore's Who's Who Registry of Business Leaders

- Who's Who in American Education
- Paragon Who's Who
- Who's Who in Science and Engineering
- Who's Who in America
- Men of Achievement
- Kraks Blå Bog (Denmark)
- Kellogg Travel Fellowship [1979]
- People to People Certificate of Appreciation [1967]
- Ford International Fellow [1965–66]

### **PROFESSIONAL HONORARIES**

- Executive Board Member of the American Agricultural Economics Association 2004–7
- President, American Agricultural Economics Association, 2006

### **EDITORIAL BOARDS DURING VARIOUS PERIODS**

- Member, Editorial Board, *Journal of Agribusiness in Developing and Emerging Economies*
- Associate Editor, *Renewable Agriculture and Food Systems*
- Member, Editorial Board, *Food Policy*
- Member, Editorial Board, *International Journal of Biotechnology*
- Member, Editorial Board, *Environmental Biosafety Research*
- Member, Editorial Board, *International Journal of Rural Management*
- Member, Editorial Board, *Food Economics*
- Member, Editorial Advisory Board, *Agribusiness in Developing/Emerging Economies*
- Member, Editorial Advisory Board, *International Journal of Rural Management*
- Member, International Editorial Board, *Tropical Agriculture*
- Member, Advisory Board for journal, *Agriculture and Food Security*
- Senior Editor, *Food Security*, 2012–14

## **NEWS MEDIA AND ORAL PRESENTATIONS**

A large number of TV, radio, magazine, and newspaper interviews in English, Danish, and Spanish. Oral presentations at a large number of universities and national and international seminars and conferences.

## **CONSULTANCIES**

Short-term consultancies for several international and national organizations, including UNICEF, FAO, World Bank, GAIN, IFAD, DANIDA, IFPRI, UNU–WIDER, and producer organizations.

## **COMMITTEE CHAIRMANSHIP AND COMMITTEE MEMBERSHIP**

- Chair, Program Advisory Committee for the Eurasian Center for Food Security, Leonov Moscow State University since 2017–18
- Member, Advisory Committee for Johns Hopkins University's Project on Ethics and Food Security, 2014
- Member, Chicago Council Task Force on Agriculture and Nutrition, 2014
- Senior Advisor, Global Development Network, 2014–15
- Chair, High Level Panel of Experts on World Food Security, 2013–15
- Member, Strategic Advisory Committee, IFPRI 2013–17
- Member, Global Economic Forum's Global Agenda Council on Food Security, 2012–14
- Member, Australian Agricultural and Research Economics Society (AARES), 2012–15
- Member, Focus Group on Food Waste, National Academy of Sciences, 2012–13
- Member, Leverhulme Centre for Integrative Research on Agriculture and Health Advisory Group, 2011–12
- Chair, Advisory Committee, Global Agriculture and Food Security Program (GAFSP), World Bank, 2010–11
- Chair, Committee to Draft Statement on Food Security, InterAcademy Panel on International Issues, 2009

- Member, National Academy of Sciences, Institute of Medicine (IOM) Planning Committee for Workshop on Mitigating Nutritional Impacts of the Global Food System, 2009
- Member, Chicago Council on Global Affairs' Roundtable on Global Agriculture and Food Policy, 2009–10
- Senior Independent Advisor, African Development Bank and IFAD, since 2007–8.
- Member, Global Agricultural Development Leaders Group, The Chicago Council, 2008
- Chair, Scientific Evaluation Team, Interdisciplinary Research and Education Fund, Wageningen University
- Member, United States National Academies' Roundtable on Science and Technology for Sustainability (STS Roundtable), 2008–11
- Member, Academic Advisory Board, Center for Chinese Agricultural Policy, Chinese Academy of Sciences 2006–10
- Member, International Advisory Board of Center for Development Research (ZEF), University of Bonn, since 2007–10
- Chair, International Advisory Board of Mansholt Graduate School, Wageningen University, since 2007–10
- Chair, AAEA T.W. Schultz Committee, 2006–7
- Chair, AAEA Nominations Committee, 2006–7
- Chair, AAEA Foundation Endowment Committee, 2006–7
- Member, AAEA Centennial Committee, 2006–7
- Member, International Scientific Committee of the 2015 World Expo in Milano 2006–15
- Member, International Policy Council on Agriculture, Food and Trade (IPC), 2002–6
- Member, Board of CARE Denmark, 2003–6
- Member, 2020 Vision Initiative Advisory Board, International Food Policy and Research Institute (IFPRI), since 2003–6
- Member, International Scientific Advisory Board for Frontis, Wageningen University (until end of 2007)

- Member of the Advisory Board of Cornell International Institute for Food, Agriculture, and Development (CIIFAD), since March 2006
- Chair, Advisory Board, Tata–Cornell Initiative on Agriculture and Nutrition, 2010–16
- Advisor to the New York Youth Institute, since 2009
- Member, Scientific Advisory Committee for Institute for Food and Agricultural Literacy, University of California, Davis
- Member, State of the Cornell Planet Curriculum Development Team, 2006–8
- Faculty Fellow, Hans Bethe House, Cornell University 2007–10
- Member, Search Committee for CIIFAD Director, 2008
- Advisor to the Social-Behavioral Sciences and Nutrition Faculty Committee, Cornell University, 2008
- Chair and member of several College and Department committees at Cornell

## Appendix 2

### My Publications and Papers

What follows is a list of the books, book chapters, articles, and papers I have written, as well as the books I have edited and written chapters for. I have a copy of each of the items on the list. The list begins with the books by language (English, Spanish, and Danish). Following is a list of articles and papers written in English. Articles and papers written in Spanish are shown next, and the list ends with articles and papers written in Danish. Some of the books, articles, and papers have been translated to other languages, including Chinese, Japanese, French, and German, with or without my knowledge. In addition to the papers listed here, I have given a large number of presentations, some supported by PowerPoint, but without written papers. They are not listed.

#### Books written in English

- Pinstrup-Andersen, P. 1969. *The Role of Food, Feed, and Fiber in Foreign Economic Assistance: Value, Cost, and Efficiency* (Ph.D. Thesis, Oklahoma State University). Stillwater, OK: Oklahoma State University.
- Pinstrup-Andersen, P. 1982. *Agricultural Research and Technology in Economic Development*. New York and London: Longman.
- Kennedy, E. T., and P. Pinstrup-Andersen. 1983. *Nutrition-Related Policies and Programs: Past Performances and Research Needs*. Washington, DC: International Food Policy Research Institute.
- Pinstrup-Andersen, P., and E. Schiøler. 2000. *Seeds of Contention: World Hunger and the Global Controversy Over GM Crops*. New Delhi: Oxford University Press.
- Pinstrup-Andersen, P., and D. Watson, II. 2011. *Food Policy in Developing Countries: The Role of Government in Global, National, and Local Food Systems*. Ithaca, NY: Cornell University Press.

### **Books written in Spanish**

Pinstrup-Andersen, P., R. Orlando Diaz, and N. R. Ruiz de Londoño. 1971. *Notas sobre el Mercadeo de Productos y Insumos Agrícolas*. Cali, Colombia: Centro Internacional de Agricultura Tropical (CIAT).

### **Books written in Danish**

- Pinstrup-Andersen, P. 1979. *Landbrugsforskning Og Økonomisk Udvikling (Agricultural Research and Economic Development)*. Copenhagen: DSR Publishing House.
- Pinstrup-Andersen, P. 1980. *Kunstgødningens Betydning for Fødevareforsyningen (The Role of Fertilizer in World Food Supply)*. Copenhagen: DSR Publishing House.
- Pinstrup-Andersen, P., and E. Schiøler. 2000. *Mæthedens Pris: Bioteknologi, Fødevarer Og Globalt Ansvar*. Copenhagen: Rosinante Forlag A/S.
- Pinstrup-Andersen, P. 2006. *Fattigdom Og Sult – Problemer Som Kan Og Bør Løses Nu (Poverty and Hunger – Problems that Can and Should Be Solved Now)*. Copenhagen: Forlaget ANIS.

### **Books edited in English**

- Pinstrup-Andersen, P., A. Berg, and M. Forman, eds. 1984. *International Agricultural Research and Human Nutrition*. Washington, DC, and Rome: International Food Policy Research Institute and United Nations Administrative Committee on Coordination/Sub-Committee on Nutrition.
- Biswas, M., and P. Pinstrup-Andersen, eds. 1985. *Nutrition and Development*. London: Oxford University Press.
- Pinstrup-Andersen, P., ed. 1988. *Food Subsidies in Developing Countries: Costs, Benefits, and Policy Options*. Baltimore and London: Johns Hopkins University Press.
- Pinstrup-Andersen, P., ed. 1993. *The Political Economy of Food and Nutrition Policies*. Baltimore: Johns Hopkins University Press.



- Pinstrup-Andersen, P., D. Pelletier, and H. Alderman, eds. 1995. *Child Growth and Nutrition in Developing Countries: Priorities for Action*. Ithaca, NY, and London: Cornell University Press.
- Pinstrup-Andersen, P., and R. Pandya-Lorch, eds. 2001. *The Unfinished Agenda: Perspectives on Overcoming Hunger, Poverty, and Environmental Degradation*. Washington, DC: International Food Policy Research Institute.
- Wiebe, K., N. Ballenger, and P. Pinstrup-Andersen, eds. 2001. *Who Will be Fed in the 21st Century? Challenges for Science and Policy*. Baltimore: Johns Hopkins University Press.
- Koning, N., and P. Pinstrup-Andersen, eds. 2007. *Agricultural Trade Liberalization and the Least Developed Countries*. Wageningen: Springer.
- Pinstrup-Andersen, P., and P. Sandøe, eds. 2007. *Ethics, Hunger and Globalization: In Search of Appropriate Policies*. Dordrecht: Springer.
- Pinstrup-Andersen, P., and Fuzhi Cheng, eds. 2009. *Case Studies in Food Policy for Developing Countries*. Volumes 1, 2, and 3. Ithaca, NY: Cornell University Press.
- Pinstrup-Andersen, P., ed. 2010. *The African Food System and its Interaction with Human Health and Nutrition*. Ithaca, NY: Cornell University Press.

### **Books edited in Spanish**

- Pinstrup-Andersen, P., and F. C. Byrnes, eds. 1975. *Métodos para la Asignación de Recursos en la Investigación Agrícola Aplicada en América Latina*. Cali: Centro Internacional de Agricultura Tropical.
- Díaz, R. O., and P. Pinstrup-Andersen, eds. 1977. *Descripción Agro-Económica del Proceso de Producción de Yuca en Colombia*. Cali: Centro Internacional de Agricultura Tropical.
- Pinstrup-Andersen, P., and R. Pandya-Lorch, eds. 2002. *La Agenda Inconclusa*. Washington, DC: Instituto Internacional de Investigación sobre Políticas Alimentarias.

### **Articles and papers written in English**

- Pinstrup-Andersen, P. 1964. "Le Coin Des Jeunes." (International Association for Agricultural Students). *Mediterranean* 2: 144–7.

- Pinstrup-Andersen, P. 1967. "Nature and Economics of Urban Sprawl." *Oklahoma Current Farm Economics* 40 (4): 83–91.
- Briscoe, N. A., J. R. Enix, and P. Pinstrup-Andersen. 1968. "Retirement of Control and Ownership Equities of Inactive Cooperative Members." *Oklahoma State University Experiment Station Bulletin*, B-659.
- Pinstrup-Andersen, P., and L. Tweeten. 1968. "The World Food Problem—A Look Ahead." *Oklahoma Current Farm Economics* 41 (1): 3–11.
- Pinstrup-Andersen, P., and L. Tweeten. 1968. "Synthetic Dairy and Meat Products: Plant versus Animal Products." *Oklahoma Current Farm Economics* 41 (3): 12–19.
- Pinstrup-Andersen, P. 1970. "The Role of Food, Feed, and Fiber in Foreign Economic Assistance: Value, Cost, and Efficiency" (Abstract of Award Winning Thesis). *American Journal of Agricultural Economics* 52 (5): 850–1.
- Tweeten, L., and P. Pinstrup-Andersen. 1970. "The Development of U.S. Foreign Economic Assistance Programs." In *Foundations of Farm Policy*, edited by L. Tweeten, pp. 481–97. Lincoln: University of Nebraska Press.
- Pinstrup-Andersen, P. 1971. "The Feasibility of Introducing Opaque-2 Maize for Human Consumption in Colombia." Centro Internacional de Agricultura Tropical, Cali, Colombia.
- Pinstrup-Andersen, P., and L. Tweeten. 1971. "The Impact of Food Aid on Commercial Food Export." In *Policies, Planning, and Management for Agricultural Development*, 525–40. Oxford: Oxford Institute of Agrarian Affairs for International Association of Agricultural Economists.
- Pinstrup-Andersen, P., and L. G. Tweeten. 1971. "The Value, Cost, and Efficiency of American Food Aid." *American Journal of Agricultural Economics* 53 (3): 431–40.
- Pinstrup-Andersen, P. 1972. "Yield and Acceptability of Opaque-2 Maize in the Tropics of Colombia." Paper presented at the Annual Meeting of the American Society of Agronomy, Miami Beach, Florida.
- Pinstrup-Andersen, P. 1973. "Allocation of Resources in Applied Agricultural Research in Latin America—A Preliminary Approach." Paper presented at the Regional Seminar on Socio-Economic Aspects of Agricultural Research, Inter-American

- Institute for Cooperation on Agriculture (IICA), Maracay, Venezuela.
- Pinstrup-Andersen, P., and R. O. Diaz. 1973. "Present and Potential Labor use in Cassava Production in Colombia." Paper presented at the Third International Symposium on Tropical Root Crops, Ibadan, Nigeria.
- Diaz, R. O., P. Pinstrup-Andersen, and R. D. Estrada. 1974. "Costs and Use of Inputs in Cassava Production in Colombia: A Brief Description." (also published in Spanish). Centro Internacional de Agricultura Tropical, Cali, Colombia.
- Pinstrup-Andersen, P., R. O. Diaz, M. Infante, and N. R. de Londoño. 1974. "A Proposed Model for Improving the Information Base for Research Resource Allocation." Paper presented at Workshop on Methods Used to Allocate Resources in Applied Agricultural Research in Latin America, Cali, Colombia.
- White, F., L. Tweeten, and P. Pinstrup-Andersen. 1974. "Allocation of Agricultural Production Capacity among Commercial Markets, Food Aid, and Production Control." *Southern Journal of Agricultural Economics* 6 (2): 129–35.
- Pinstrup-Andersen, P. 1975. "Cost-Benefit Relationships in High-Quality Protein Maize Production." In *High-Quality Protein Maize*, 337–51. Stroudsburg: Dowden, Hutchinson, and Ross.
- Pinstrup-Andersen, P., and F. D. Byrnes, eds. 1975. "Methods for Allocating Resources in Applied Agricultural Research in Latin America." Centro Internacional de Agricultura Tropical, Cali.
- Pinstrup-Andersen, P., and F. D. Byrnes. 1975. "Highlights of Workshop Conclusions and Suggested International Follow-Up." In *Methods for Allocating Resources in Applied Agricultural Research in Latin America*, edited by P. Pinstrup-Andersen and F. D. Byrnes. Cali: Centro Internacional de Agricultura Tropical.
- Pinstrup-Andersen, P., R. O. Diaz, M. Infante, and N. R. de Londoño. 1975. "A Proposed Model for Improving the Information Base for Research Resource Allocation." In *Methods for Allocating Resources in Applied Agricultural Research in Latin America*, edited by P. Pinstrup-Andersen and F. D. Byrnes. Cali: Centro Internacional de Agricultura Tropical.

- Pinstrup-Andersen, P., and R. O. Diaz. 1975. "A Suggested Method for Improving the Information Base for Establishing Priorities in Cassava Research." In *The International Exchange and Testing of Cassava Germ Plasm*, edited by B. Nestel, and R. MacIntyre, 51–9, Ottawa and Cali: International Development Research Center and CIAT. (Proceedings of an Interdisciplinary Workshop Held at CIRA, Palmira, Colombia, February 4–6, 1975).
- Pinstrup-Andersen, P., N. R. de Londoño, and E. Hoover. 1976. "The Impact of Increasing Food Supply on Human Nutrition: Implications for Commodity Priorities in Agricultural Research and Policy" (also published in Spanish). *American Journal of Agricultural Economics* 58 (2): 131–42.
- Pinstrup-Andersen, P., N. R. de Londoño, and M. Infante. 1976. "A Suggested Procedure for Estimating Yield and Production Losses in Crops." *PANS* 22 (3): 359–65.
- Pinstrup-Andersen, P. 1976. "The Role of Fertilizer in Meeting Developing Countries' Food Needs." Paper presented at the 12th Annual Conference of the Missouri Valley Economic Association, Tulsa, Oklahoma.
- Pinstrup-Andersen, P. 1976. "Preliminary Estimates of the Contribution of Fertilizer to Cereal Production in Developing Market Economies." *Journal of Economics* 2: 169–72.
- Armstrup, C. R., P. Pinstrup-Andersen, R. P. Hignett, P. J. Stangel, and D. A. Russell. 1977. "Suggested Fertilizer-Related Policies for Governments and International Agencies." International Fertilizer Development Center, Muscle Shoals, AL.
- Doll, J., P. Pinstrup-Andersen, and R. Diaz. 1977. "An Agro-Economic Survey of the Weeds and Weeding Practices in Cassava in Colombia." *Weed Research* 17, Paper 91.
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- Pinstrup-Andersen, P. 1977. "Decision-Making on Food and Agricultural Research Policy: The Distribution of Benefits from New Agricultural Technology among Consumer Income Strata." *Journal of Agricultural Administration* 4: 13–28.
- Pinstrup-Andersen, P., and E. Caicado. 1977. "The Potential Impact of Changes in Income Distribution on Food Demand and

- Human Nutrition." *American Journal of Agricultural Economics* 60 (3): 402–15.
- Pinstrup-Andersen, P. 1979. "The Potential Impact of Changes in Income Distribution on Food Demand and Human Nutrition: Reply." *American Journal of Agricultural Economics* 61 (2): 382–83.
- Pinstrup-Andersen, P., and D. Franklin. 1977. "A Systems Approach to Agricultural Research Resource Allocation in Developing Countries." In *Resource Allocation and Productivity in National and International Agricultural Research*, edited by T. M. Arndt, D. Dalrymple, and V. Ruttan, 416–35. Minneapolis: University of Minnesota Press.
- Pinstrup-Andersen, P. 1978. "Comments on Market Price Effects of New Rice Technology on Income Distribution. Economic Consequences of the New Rice Technology." 303–11. International Rice Research Institute, Los Baños.
- Pinstrup-Andersen, P. 1979. "The Impact of Technological Change in Agriculture on Production, Resource Use, and the Environment: Towards an Approach for Ex Ante Assessment." International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Pinstrup-Andersen, P. 1979. "Modern Agricultural Technology and Income Distribution: The Market Price Effect." *European Review of Agricultural Economics* 6 (1): 17–46.
- Pinstrup-Andersen, P. 1979. "Selected Economic Aspects of Agricultural Research." In *Plant Cell and Tissue Culture: Principles and Applications*, edited by W. Sharp et al., 67–88. Columbus: Ohio State University Press.
- Pinstrup-Andersen, P. 1980. "Assessment of Long-Run Consequences of Technological Change in Agriculture." Paper presented at IIASA Task Force Meeting on Limits and Consequences of Food Production Technologies, Vienna, Austria.
- Pinstrup-Andersen, P. 1980. "The IARI Approach to Socio-Economic and Farming Systems Research and its Utility for Rural Development Activities." CDR Seminar Paper, B80.5. Centre for Development Research, Copenhagen, Denmark.

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- Pinstrup-Andersen, P. 1984. "A Note on the Assessment of the Potential Impact of Technological Change on Food Consumption and Nutrition." Prepared for the Internal Workshop on Selected Economic Research Issues in Latin America, Cali, Colombia.
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- Pinstrup-Andersen, P., and S. K. Kumar. 1984. "Food Policy, Human Nutrition, and Fertility." In *Rural Development and Human Fertility*, edited by W. A. Schutjer, and C. S. Stokes, 235–51. New York and London: Macmillan.

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- Pinstrup-Andersen, P. 1985. "Commentary: Nutrition and Research." *The IDRC Reports* 14 (2): 22–3.
- Pinstrup-Andersen, P. 1985. "The Role of Food Policy Analysis in Rural Development Cooperation." Paper presented for International Symposium on Effectiveness of Rural Development Cooperation, Royal Tropical Institute, Amsterdam, The Netherlands.
- Pinstrup-Andersen, P. 1985. "Food Prices and the Poor in Developing Countries." *European Review of Agricultural Economics* 12 (1/2): 69–81.
- Pinstrup-Andersen, P. 1985. "Agricultural Project Design and Human Nutrition." In *Proceedings of the Fifth Agriculture Section Symposium Population and Food*, edited by T. J. Davis, 153–6. Washington, DC: The World Bank.
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- Pinstrup-Andersen, P. 1985. "An Analytical Framework for Assessing Nutrition Effects of Policies and Programs." In *Food Policy—Frameworks for Analysis and Action*, edited by C.K. Mann, and B. Huddleston, 55–66. Bloomington, IN: Indiana University Press.
- Pinstrup-Andersen, P., and P. B. R. Hazell. 1985. "The Impact of the Green Revolution and Prospects for the Future." In *Food Reviews International* 1 (1): 1–25.
- Pinstrup-Andersen, P. 1986. "Macroeconomic Adjustment Policies and Human Nutrition: Available Evidence and Research Needs." CDR Seminar Papers B.86.2, Centre for Development Research, Copenhagen, Denmark.
- Pinstrup-Andersen, P. 1986. "Food Policy and Human Nutrition." In *Dry Area Agriculture, Food Science, and Human Nutrition*, edited by D. F. Nygaard, and P. L. Pellett, 67–82. New York: Pergamon Press.
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- Pinstруп-Andersen, P. 1987. "Nutrition Interventions." In *Adjustment with a Human Face: Protecting the Vulnerable and Promoting Growth*, edited by G. A. Cornia, R. Jolly, and F. Stewart, 241–56. Oxford: Clarendon Press.
- Pinstруп-Andersen, P., M. Jaramillo, and F. Stewart. 1987. "The Impact on Government Expenditure." In *Adjustment with a Human Face: Protecting the Vulnerable and Promoting Growth*, edited by G. A. Cornia, R. Jolly, and F. Stewart, 73–89. Oxford: Clarendon Press.
- Pinstруп-Andersen, P. 1987. "Macroeconomic Adjustment Policies and Human Nutrition: Available Evidence and Research Needs." *Food and Nutrition Bulletin* 9 (1): 69–86.
- Pinstруп-Andersen, P. 1987. "Assuring Food Security and Adequate Nutrition for the Poor." In *Health, Nutrition, and Economic Crisis: Approaches to Policy in the Third World*, edited by D.E. Bell, and M. R. Reich, 147–75. Dover: Auburn House Publishing Company.
- Pinstруп-Andersen, P., and P. B. R. Hazell. 1987. "The Impact of the Green Revolution and Prospects for the Future." In *Food Policy: Integrating Supply, Distribution, and Consumption*, edited by J. P. Gittinger, J. Leslie, and C. Hoisington, 106–18. Baltimore and London: Johns Hopkins University Press.
- Pinstруп-Andersen, P. 1987. "Food Prices and the Poor in Developing Countries." In *Food Policy: Integrating Supply, Distribution, and Consumption*, edited by J. P. Gittinger, J. Leslie, and C. Hoisington, 282–92. Baltimore and London: Johns Hopkins University Press.
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