

A CONCEPTUAL JOURNEY TO THE FOREST: PLANTING A PROSUMER ECONOMY

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ABSTRACT

Thirty years after my Fulbright MSc Scholarship at Ohio State University in 1993-93, what I learned and experienced then, has still a profound impact in my work. Since then, I have worked on ecology and complex systems in NGOs and social enterprises. While my love of scholarship and writing continued, I ended up working in the area of economics, circling back to the ‘eco’ of ecology, developing the prosumer economy to get us out of polycrisis.

Keywords: ecology • systems science • ecological modeling • prosumer economy • polycrisis



I started very early with the intention of becoming a scientist. In 1983, at the age of 13, I began conducting scientific research on planktonic species and later, aquatic Heteroptera and Coleoptera species in Sultan Marshes – a vast wetland complex in Central Anatolia. Every month I collected water samples from floodplains and identified and counted the species under a microscope. I remember puncturing holes in the ice when Sultan Marshes froze so that I could collect samples. When I started studying at Kayseri Science High School, I wrote peer-reviewed articles and won first prizes twice in Turkish Scientific and Technical Research Council (TÜBİTAK) competitions for my work on plankton and insects. In 1986, I worked with fellow students Oğuz Onay and İsmet Bayraktaroğlu on a project to create the first known expert system software on identifying aquatic insects. The research thesis and the peer-reviewed articles were cited extensively, and my work was deemed at the level of a master’s and PhD in Biology; therefore, I was recommended to study something else for my Bachelor’s degree. I intended to study environmental science; however, there was no such undergraduate department in Turkey at that time. Therefore, I pursued a degree in Earth Science (Geological Engineering), the foundational field of environmental sciences, at the Middle East Technical University (METU) in Ankara.

While doing research at Sultan Marshes, I sent monthly reports on the status of birds to the General Directorate of Environment in Ankara. No one had asked me to do this, but somehow it must have gained some interest in the “Capital,” as I was asked by the General Directorate to be the Turkish President’s guide for his visits to Sultan Marshes and Seyfe Lake. During this

trip, I was approached by the Minister of State, Adnan Kahveci, and asked to be one of his advisors. I accepted and served until he became Minister of Economy during my freshman year at METU. Little did I know that I would end up in economics.

SHIFTING TO ECOSYSTEM SCIENCE THROUGH FULBRIGHT

While I gained an excellent foundation in geology at METU, I wanted to continue with my initial intention: environmental science. Although geology allows us to understand the dynamics of our lithosphere and its interaction with the atmosphere, hydrosphere, and ecosphere through hundreds of millions of years and is crucial to having ‘a bird’s eye view,’ a sustainable future also needs to be built through the understanding of *how* humans and their economy interact with their environment today.

It is with this in mind that I proceeded to apply for a Fulbright Masters Scholarship. The scholarship enabled me to enter Ohio State University’s Environmental Science Master’s Program. My thesis advisor was the famous Professor Dr. William J. Mitsch. While I knew him from his very impactful “Wetlands” textbook, upon entering his lab I had the opportunity to learn from him directly. This also included being able to engage with his researchers and collaborators who were working on range of other topics that continue to shape my thinking today. I became acquainted and even dug deep into systems science, systems dynamics, ecological modeling, ecological engineering, and finally, ecological economics.

There, I started Stella™ programming and built systems dynamics models. These were informed by H.T. Odum’s work, as Dr. Mitsch was his student. Back in 1958, H.T. Odum had already considered the valuation of ecosystem services and ecological economics. He divided fossil fuel use by GNP at the national scale to estimate a ratio of calories per USD. From this, Odum calculated the ecological energy flow he called “life support value.” He used energetic models to demonstrate how energy flows through ecosystems. As Dr. Mitsch used to say, referring to Odum’s work, it is because “the food system is subsidized by fossil fuels [that] we eat –petroleum.”

Being at Ohio State University allowed me to branch out into areas of discrete event modeling, encompassing operations research at the industrial engineering department, satellite imagery, raster Geographic Information Systems (GIS), and GIS Modelling from the geography department. I published papers on estimating viable populations of Piping Plovers *Charadrius melodus* using discrete event models and artificial neural network models using geospatial data for bird breeding habitat identification. Dr. Mitsch taught us about ecological engineering at the Olentangy Wetland Research Park, which we helped build as graduate students. He was also part of a larger network including S.E. Jorgensen of Ecological Modelling and Robert Costanza of

Ecological Economics (also an H.T. Odum PhD student). Both helped me develop a systemic perspective and its intersection with human society and human behavior and its impact on nature. I also developed an acute sense of humans being part of the larger ecosystem.

HUMANS AS AN INTEGRAL PART OF NATURE

As a former nature “protector,” my view was very well summarized in Gary Larson’s “Wildlife Preserves” cartoon. Wildlife or nature was a place where there were no humans. I came to realize that, especially after my Fulbright experience, studying Systems Science and Ecological Modelling, Ecological Engineering, and Ecological Economics, humans were part of it, and “yes” were usually a destructive element. How do we turn them into change agents for a symbiotic relationship with nature rather than destructive? As such, I decided to study Conservation Biology and became a MacArthur scholar at the University of Minnesota to not only pursue a PhD in Conservation Biology, but also a minor in Development and Social Change. I studied Environmental Sociology, Anthropology, Public Policy, History, and even ended up teaching a class in Human Ecology with Phillip J. Regal. My PhD advisor, the late Professor William P. Cunningham, gave me a foundation in environmental ethics and how to approach “human” as part of a future. His influence would manifest itself in our article published in “Posthumanism Journal,” 24 years later.

THE JOURNEY AFTER FULBRIGHT

While attending METU in Ankara, I founded the first birdwatching club in Turkey called “Ankara Kuş Gözlem Topluluğu” in 1989. We went on field trips together and entered our observations on a computer into “DBASE 3+,” a cumbersome but useful software for researchers.

A core premise was the notion that if we had enough people who loved birds, we could conserve them and prevent habitat-related loss. With this intention, we started a movement, creating bird-watching clubs nationwide with the Society for the Protection of Nature in Turkey. While creating bird-watching clubs was a positive start, the most crucial aspect for me was fostering a sense of unity and camaraderie among these groups. To achieve this goal, we decided to organize a bird-watching conference at Erciyes University in Kayseri, where I started as a faculty member after receiving my PhD in 2000. These conferences continue today, with the ‘20th Turkey Bird Watching Conference’ recently held by Nature Society in 2023.

During the first conference, I introduced ‘Kuşbank’ (Bird Bank), an internet database for recording and sharing bird observation data online, wherever you are. We encouraged everyone to enter and share their observations on this platform instead of storing data only in notebooks. It worked, and we collected data at a scale and amount never before achieved through crowd-

sourcing birdwatching. KuşBank became the pilot project for WorldBirds by the Royal Society for the Protection of Birds and Birdlife and eventually merged with eBird to become a global system. To give you an idea, in 2023, more than 340 thousand birdwatchers entered data in eBird with more than 247 million observations from 249 countries. This was a great lesson for me on how crowds and people as whole can create extensive change. Combined with what I learned during my Fulbright experience, a pathway forward emerged.

THE POLYCRISIS

We are currently in a global polycrisis. The human economic system driven by an anthropocentric growth mindset is destroying planetary life support systems. The global surface temperature has increased by 1.1°C since the pre-industrial period, hitting a maximum of 1.46 in 2024. Climate Change has reached levels where the UN Secretary-General warned in July 2023, “the era of global warming has ended” and “the era of global boiling has arrived.” In the paper by Richardson et al. in *Science* in September 2023, it was reported that six out of nine planetary boundaries have already been transgressed, indicating the earth is not a safe space for humanity anymore. The root cause of the polycrisis that humanity is experiencing can be attributed to current economic practices and the broader normalization of unjust practices in the current socio-economic paradigm.

The dominant socio-economic paradigm is focused on profit maximization and seeks infinite growth, even though the concept of infinite growth with finite resources is not physically possible. That is why, across the last decade, different movements such as Degrowth, Solidarity Economies, Commons Movement, Peer to Peer Movement, Community Economies, Transition Networks, Social Enterprises, and cooperatives have gained significant importance – and people started to create alternative ways of transforming the current socioeconomic paradigm. More people have started to realize the consumer-based economy is neither ecologically nor socially sustainable and have become involved in those movements. In simpler terms, the rise of all such alternative economies implies the world needs a new, ecologically, and socially just economic system.

THE SOLUTION: PROSUMER ECONOMY

Being first exposed to biology and then earth science, having emerged myself through the Fulbright scholarship experience in systems science and dynamics, ecological modeling, engineering, and economics, and with the realization that it is really about people and their paradigms, and finally observing first-hand how crowds can make a huge difference – I invented the idea of a “Prosumer Economy.”

The Prosumer Economy, if implemented, could solve the polycrisis in all aspects as it looks to create an ecosystem that is considerate of social, ecological, and economic inequality and unjust practices. In other words, the prosumer economy is a circular economic system that brings socially and ecologically just prosumers together to create symbiotic relationships among themselves and all other beings. In biology, there are no consumers; everything prosomes, and every organism transforms something into something else used by something else. The significance of the prosumer economy is that it is an ecosystem like a forest that creates positive ecological and social externalities. For example, the ecosystem service of Amazon forests was estimated to be approximately 3.527 billion in the 2007 USD price index, 3 to 4 times more than the total income of the world's 20 most valuable companies. Or, in more specific definitional terms, "prosumer economy is a macroscale circular economy with minimum negative or positive ecological and social impact, an ecosystem of producers and prosumers, who have synergistic and circular relationships with deepened circular supply chains/networks, where leakage of wealth out of the system is minimized."

As there is an overlap with many alternative economies at the goals and tools such as degrowth, solidarity, community economies, and commons movements, any economy can call itself a prosumer economy if:

1. the economic system, the ecosystem, and the community are established upon ethics. The system embraces the golden rule, which is "do unto others as you would have them do unto you." Others include all the organisms and planetary life support systems; crucial when considering the biodiversity crisis we are currently experiencing;
2. all members of the ecosystem aim for solidarity, collaboration, cooperation, and ecological and social justice and work towards this shared goal;
3. the sustainable supply chains in the ecosystem are deepened, circular, and reinforced by the support systems built in the prosumer economy ecosystem; and,
4. the community is governed by democratic local governance.

In a prosumer economy, the leakage out of the ecosystem is minimized so that the money in the system circulates among producers and prosumers. As more prosumers enter the system and support just producers, more resources become encompassed into the ecosystem and circulate. When leakage is minimized, and more prosumers are embodied in the ecosystem, the common consumer-based economy will become a prosumer economy. As more prosumer economies form worldwide and change the conventional paradigm from within, the dominant paradigm will eventually get smaller, and the socially and ecologically just economies will become the conventional paradigm.

For the conventional paradigm to become the prosumer economy and be adopted by different communities to create awareness around it, the “Prosumer Economy Society” has been a working case study in Turkey since 2015 and an apt model for reference. The Prosumer Economy Society encourages ecologically and socially just business models, reinforces and strengthens good practices, and informs the public about the prosumer economy’s positive impacts on ecology and in building a sustainable society.

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THE LABORATORY: GOOD4TRUST.ORG

The prosumer economy was an idea, a theory, a must, but we also needed somewhere to demonstrate what is practical and realistic. In this light, we needed to build a macrocosm to explore the concept, see the problems and challenges, and demonstrate it to others “live.” We called it Good4trust.org. You can think of it as an economic equivalent of the “Biosphere 2,” the Earth system science research facility in Oracle, Arizona.

Good4Trust is a social enterprise working with the principles of the prosumer economy. It is a socially and environmentally just bazaar and community. We intentionally do not refer to it as a marketplace, but a bazaar like the Grand Bazaar in Istanbul, that is governed by the shop owners and is based on solidarity instead of competition. It is founded on the principles of the prosumer economy, as listed above, and practices them. The Bazaar is a total economy that includes retail, wholesale, goods and services. Even its complementary currency called “trust.” Trust enables system loyalty, increases circularity, and reduces leakage. Currently, there are more than 25,000 prosumers, that is, buyers and 770 producers, namely sellers, including Micro, Small, and Medium Enterprises, NGOs, Social Enterprises, and Cooperatives. The system has been operating functionally for more than seven years, while also expanding and bringing other creative initiatives into the network, such as Qaori.coop.

CONCLUSION

The Fulbright experience has transformed my thinking and allowed me to see the world as a whole. Bringing so many nationalities together to inspire each other necessarily allows us to see the world from different perspectives – not just from a national perspective but from a planetary perspective. The experience exposed me to so many different disciplines, both in sciences and humanities, that I realized that we need to be in a post-humanist state. The process that led me to the “prosumer economy” was highly influenced by the Fulbright scholarship in my early years of formation.

In this polycrisis period, our survival on this planet is dependent on peace. Senator Fulbright said, “...the common bond of human dignity is recognized as the essential bond for a peaceful world.” Today, where we have transgressed planetary boundaries, human dignity also involves treating all beings on the Planet with dignity and respect. To create a symbiotic relationship and peace on this planet, for a dignified existence, we need to structure our economy into a prosumer economy.

NOTES

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BIOGRAPHY

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