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Understanding the Economic and Health Benefits of Agroecology with Leopoldo Rodriguez

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Welcome to PDXPLORES, a Portland State Research podcast featuring scholarship, innovations, and discoveries pushing the boundaries of knowledge,practice, and what is possible for the benefit of our communities and the world.

My name is Leopoldo Rodriguez. I'm an associate professor of International and Global Studies. My research interests revolve around how we can meet ourWithin ecological limits, which is essentially the subject of sustainable development. More specifically, I am interested in agroecology, an environmentally friendly method of food production, as a satisfier for a diversity of human needs, not just nutrition.

Agroecology uses ecological principles for the production of food and other natural materials. It seeks to combine scientific knowledge, often derived from chemistry and biology with traditional forms of knowledge based on observation through many generations. As such, it is not only sensitive to environmental issues, but also respectful of cultural practices.This is one of the things that is particularly interesting to me.

A key component of agroecology is healthy soils, which provide nutrition to plants, allowing for strong growth and pest resistance. Health results involve the activity of a wide variety of bacteria and fungi. Which recycle nutrients mostly by the decomposition of organic materials found on the farm itself.

Conventional agriculture, on the other hand, is based on synthetic fertilizers and pesticides, which tend to eliminate living organisms from the soil. It also promotes monocultures making the crop more susceptible to pests.

As climate change becomes more pressing with droughts in some places and flooding in others becoming more frequent, agroecology is increasingly gaining the attention of policy makers. It's focused on soil health, locally produced inputs, and the diversification of crops makes the system of food production a lot more resilient to climate change. A few years ago, the Food and Agriculture Organization of the United Nations, considered agroecology as the method of food production that we need to adopt to address climate change.

This has faced significant resistance from corporations that produce the agrichemicals that are used in conventional agriculture, but there's growing recognition that agroecology is the future in terms of food production.

Well, my project basically is focused on the social and economic aspects of agroecology. I'm a social scientist, not a biologist or a chemist or somebody who does agriculture from a natural sciences perspective, but from a social sciences perspective. So, agroecology culture doesn't only have an impact on soil health and, and plant production, but it's also much more benign on the producers themselves.

One of the greatest interests in developing countries of the farmers themselves in agroecology is that the input required for agroecology are oftentimes sourced in the farm, and so they have less expenditures than if they had to buy pesticides and fertilizers from outside the of the farm. This lowers their costs and therefore their socioeconomic status and wellbeing of their family is improved.

That is one of the great things in terms of our agroecology in terms of the economic impact on households. But there's other social aspects of these, for example, health, which is another thing that I'm studying. Do households that produce agroecological foods and products have less incidents of certain diseases?

The hypothesis is they do, because they are not using chemicals that are harmful to their health. So by not being exposed to these chemicals, you would expect that there will be fewer, less incidents of some diseases. Also there's the idea that agroecological produced food carries a better nutritional content than products produced by conventional methods, and hence, the people that are consuming these goods will be in better health. So these are two of the aspects that I'm looking at in my research. Economics of the household and the health of the household.

The people that I am interviewing are, they're all producers of vegetables in, within our radius of 50 miles around the city of La Plata, which is a city very nearby Buenos Aires. Bueno Aires is a very large city. About 15 million people live in the metropolitan area. And so these vegetable producers really are producing for that larger urban area, vegetables from lettuce to peppers to cabbage and all of all of all of those things, right? Most of these producers are Bolivian immigrants who come to Argentina with very little means and rent the land where they produce. They use conventional methods. Usually they purchase pesticides and, and fertilizers, but, in Argentina, prices are very high because they're tied to the dollar, and as the economy doesn't do very well, the price of these inputs gets very expensive.

So this being very poor families, oftentimes they end up facing high input costs and they have built associations such as the, the Union of Land Workers who

have been seeking solutions to these. Right, because this higher cost means their families are not able to do so well. And also because they notice that sometimes they have health problems associated with the use of agrichemicals.

So one of the solutions they have solved is to promote agroecology. So these are families, producers of vegetables, small, very small plots, about two and a half acres each family, they're very, very poor, generally, but not destitute, let's say, because they're able to, normally they have enough savings to start with one crop.

Specifically, I am interested in knowing if the economic condition of the households that I'm seeing I'm interviewing improves when they switch to agroecology. The study is built around the idea that we have some producers that have switched to. And other producers that are still using conventional methods.

So we're going to, we have interviewed at this point 16 households producing agroecologically and 14 that produce with conventional methods. What we're trying to do then is one of the things that we're trying to see is if the households that have switched to agroecology do better economically than the households that have not switched to agroecology.

Another hypothesis is that the health of the households that produce agro ecologically is gonna be better. When you talk to the producers that use conventional methods, some of them know about agroecology. The existence of agroecology is an option, but they seem to be, you know, they don't have much interest in it.

The people that have adopted agroecology have gained great pride in what they do. I found that very interesting because it shows. that agroecology is also affecting things that go beyond the economy of the household, which it seems to be improving, but also affects some sense of meaning for them in what they do.

And I think that a very valuable aspect of agroecology is that it's knowledge based, not that conventional methods are not knowledge based but the knowledge is in the corporation and its proprietary. In agroecology, the knowledge is farmer and is shared peer to peer, peer to peer workshops.

My name is Leo Paul Rodriguez. My research focuses on how human needs are met within ecological limits.