

Poverty and Health in Argentina

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Abstract

This article examines health conditions in the rural areas of central Argentina, the country's main region for soy-bean production and export. Health conditions are analyzed through the concepts of emerging and re-emerging diseases in a context of increasing poverty.

Data on poverty and health was obtained from both primary sources (trade unions, government officials, rural doctors, and the South Watch/FA/FODEPAL/UNR working group) and secondary sources (IPEC/INDEC, IDESA, Consultora Equis, the Argentine Ministry of Employment, ILO, the Ministry of Health, the Ministry of the Environment, toxicology centers and rural doctors).

Analysis of rural health conditions gives cause for concern. There is evidence of deterioration in the social determinants of health as evidenced by an increase in rural and urban poverty associated with informal employment and child labor. At the same time lack of government epidemiological and toxicological data appears to hide or distort the reality of health conditions.

Introduction

This article examines health conditions in the rural areas of central Argentina, the country's main region for soy-bean production and export. Health conditions are analyzed through the concepts of emerging and re-emerging diseases in a context of increasing poverty.

Rosario and the central region of Argentina (which includes the provinces of Córdoba, Santa Fe and Entre Ríos) are among the most prosperous areas of Argentina. Their prosperity is founded on

an export-oriented model of agricultural development characterized by monoculture, and the application of input technologies, such as soybean- and corn-based biofuels.

Argentina has become Mercosur's second largest soy producer and harvested 41 million tons of soy during the last harvest. The central region contributes 59.7% of the country's total soybean production. Between 2000 and 2004 Argentina's soy crop doubled in value from 3.8 billion dollars to 7.6 billion dollars.¹ Soy production, which includes beans (grains and seeds), soy oil, and soy meal, represents the country's main source of foreign currency. More than 96% of soy production is exported, representing almost 50% of world trade in soy meal and oil and contributing over US\$ 1.4 billion dollars in taxes to the State.²

Nevertheless, there is 'collateral damage' from this industry which can be illustrated by the following:

- 100,000 producers disappeared between 1988 and 2000.
- Of 174 million hectares dedicated to soy production, 36.5 million are worked by contractors.
- In the Pampas region there is a disturbing trend toward the concentration of land ownership.
- The expansion of soy farming is affecting the conservation of native forests in northern Santa Fe, Chaco, Formosa, Santiago del Estero and Salta and is driving out local inhabitants.³
- In more fragile ecosystems the increase in the acreage sown with soy plants results in deforestation, loss of biodiversity, and substitution of other cultures.⁴
- The mass production of soybean- and corn-based biofuels for export at a time when the availability of cheap fossil fuels is ending may lead Argentinean agriculture to switch away from food production. The consequences include an increase in food prices, indiscriminate deforestation of native

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woodland, agrochemical pollution, and soil erosion.⁵

There are additional concerns. Agro-business uproots rural populations. In the words of Ricardo Mascheroni, for peasants “the land is where your entire life unfolds. ... Rural workers who emigrate to towns and cities lose their roots.”⁶ There have also been reports of adverse health effects caused by the indiscriminate use of agrochemicals. International studies on the effects of agrochemicals on mammals show fetal skeletal damage, marked weight changes, and endocrine abnormalities, even mortality at chronic levels of exposure.⁷

Added to this are high rates of occupational accidents. Farming has the third highest accident incidence of any industry (11.62) and this rate varied little between 2005 and 2006. Additionally, average sick leave is 30.5 days per year (also third highest).⁸

Finally, there is yet another negative side to the triumph of economic growth in the rural sector: child labor. Table 1 (page 100) illustrates the existence of ‘child exploitation’ in several provinces, heightening the need to understand its link with the ‘real unemployment’ suffered by adults.⁹

Methodology

This study is based on data obtained from both primary and secondary sources. Primary sources included trade unions, government officials, rural doctors and the Observatorio del Sur (South Watch), the international office of the FAO, the Regional Project of Technical Cooperation for Economic Development, Agrarian Policies and Rural Development in Latin America, and academics from the rural working group at the National University of Rosario. Secondary sources included the National Institute of Statistics and Census (INDEC), the Institute of Social Development (IDESA), the Institute of Energy Research and Training/Argentinean Workers Union (IEF/CTA), Equis Consultants, the Argentine Ministry of Employment, ILO, the Ministry of Health, the Ministry of the Environment, toxicology centers and rural doctors.

For analytical purposes this report been organized into the following sections: poverty in

Argentina, diseases of poverty, and medical studies in rural health.

Poverty in Argentina: truth and lies

Data from the World Economic Forum’s (WEF) 2006-2007 report paint a worrisome picture of poverty and social inequality in Argentina. According to the WEF Argentina’s institutions are as inefficient as those of Nigeria, Nepal, and Burundi. Argentina’s infrastructure is on the same plane as that of Jamaica, Bolivia, and Pakistan. Argentina’s black market ranks 90th internationally, placing it with Ethiopia, Bangladesh, Burundi, and Ecuador.¹⁰

There are two measures of Argentinean poverty: the official one and the one used by consultants. The discrepancy results from a decision in 2003 by the National Institute of Statistics and Census (INDEC) to change how poverty was measured. The new index made any comparisons with previous years impossible and provoked a Presidential take-over of the Institute in early 2007. As a consequence of the take-over, the Institute made further methodological changes which resulted in a lowering of the consumer price index, thus making inflation appear to be less of a problem than it really is.*

The 2007 take-over only created more confusion. The Ministry of Labor, Employment, and Social Security noted: “After 2003 estimates were regularly provided which incorporated updates in the methodology of data collection. This made any direct comparison with data gathered using previous methods impossible. According to INDEC, the rate of economic activity surveyed using the previous methodology reached 42.9% in May 2003, while the new method produced a rate of 45.6%. [...] Various studies examined the impact of these methodological changes. When pre-2003 methods were used to analyze the rate of economic activity, not only did it not increase, it actually fell 6.7%. [...] These analyses demonstrate the importance of further studies to evaluate the effects of the new methodologies.”¹¹

* By lowering the inflation rate the Argentinean government hoped to pay less interest on government bonds. However, the controversy discredited INDEC and had a negative impact on the credibility of key indicators including the calculation of National Accounts, the development of monetary policy, the incidence of poverty, salary adjustment, etc.

Table 1: Working children in Argentina 2000/2008

| | |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SAN JUAN | Olive groves and onion growing |
| TUCUMÁN | Potato harvest Child sexual exploitation and child trafficking |
| MISIONES | Child sexual exploitation and child trafficking Mate tea harvest |
| BUENOS AIRES | Fruit and vegetable growing Child sexual exploitation and child trafficking Poultry farms |
| MENDOZA | Vineyards Garlic and onion harvest |
| CHACO | Cotton harvest Woodcutters – forest industry Child sexual exploitation and child trafficking Miscellaneous rural jobs (spraying, looking after animals, fencing) Brickworks Charcoal ovens Fishing and hunting Land clearance (logging camp) Workshop, lumber mill, carpenters' assistant |
| LA RIOJA | Jojoba harvest |
| LA PAMPA | Brick ovens |
| SALTA | Tobacco harvest Citrus harvest Child trafficking |
| NEUQUÉN | Car washers |
| SAN LUIS | Car washers |
| RÍO NEGRO | Car washers Fruit picking Selling newspapers |
| CATAMARCA | Shepherding |
| CORRIENTES [†] | Tomato and pepper growing and harvesting Rice growing Timber companies Child sexual exploitation and child trafficking Herding and milking animals Plowing Spraying Girls in domestic service due to debts |
| SANTA FE | Cardboard collection Car washing |

[†] Much of this data was gathered in 2004 by students of Agrarian Law at the Faculty of Law/UNNE as part of a practicum organized by Professors Aldo Casela and Maria Alejandra Silva. Each student gathered data from his or her own city or town: Mercedes, Ituzaingó, San Luis del Palmar, Santa Ana, Laguna Brava, Riachuelo (San Cayetano), Colonia Gobernador Ruiz (Santo Tomé), Ayuití (54 km from the city of Corrientes), La Luciana (45 km from Corrientes), Mburucuyá, Santa Lucía and Bella Vista. Data for 2008 come from a field survey of child labor and health undertaken by the author as a researcher for CONICET (“Trabajo infantil y salud en Corrientes: del derecho a la compensación del daño al derecho a la salud”, Res 232/08). The 2008 study included slave labor/child trafficking for purposes of labor or sexual exploitation, servitude to pay off debts and the sale of organs.

| | |
|---------------------|----------------------------------------------------------------------------------------------------------------------|
| | Brickworks – construction works Agricultural area (vegetables) Child sexual exploitation and child trafficking |
| ENTRE RÍOS | Citrus harvest Child sexual exploitation and child trafficking |
| JUJUY | Tobacco and Andean potato harvest Sugarcane harvest |
| FORMOSA | Cotton and fruit picking Street sellers Child sexual exploitation and child trafficking |
| SANTIAGO DEL ESTERO | Woodcutters |

Source: Silva, María A (2008) based on Nieto, 2000, Casella & Silva, 2004, UTRE/CTERA (2005), IPEC/ILO, 2003, Calvo, 2004 & Red No a la Trata, 2008.

Governmental maneuvers at INDEC provoked a reaction from numerous scientists and institutions.[‡] Renowned sociologists at the Buenos Aires National University requested that INDEC's working methodologies conform to technical criteria consistent with national and international scientific norms.¹⁹ INDEC employees, through the ATE union, also protested.[§] In fact, the director of the Permanent Household Survey had to be replaced when she refused to certify poverty estimates which resulted from manipulation of the Consumer Price Index (CPI).

As a consequence of this, many private consultancy firms began keeping their own records and concluded that “poverty has not diminished, but rather increased” despite the 8.5% growth in GDP.

According to Artemio López of Consultorio Equis, several factors have led to the “generation and consolidation of hardcore poverty [in Argentina].” These include the particularly severe impact of inflation on the most vulnerable sector of society as well as the upward redistribution of wealth reflected in “a strongly regressive tax structure, high levels of informal employment, and the absence of social policies [to protect the poor].” Consultora Equis began using their own measurements of 1,500 products in 300 metropolitan stores in July 2007. Their research shows an actual increase in food prices of 25%, a far cry from the 8.6 % published by INDEC.¹⁴ This panorama becomes more alarming as the global crisis begins to affect Argentina. Job losses

have begun to occur in several areas of production.

It would seem, therefore, that while the government proclaims that economy is doing fine, reality is quite different.

Diseases of poverty

Each year 700,000 people die in Latin America from diseases that could have been prevented given current resources and levels of scientific understanding; an additional 100,000,000 people are suffering from malnutrition.²¹ The concept of “new and re-emerging” diseases recognizes the way in which ill-health is linked to deterioration of social conditions. These new and re-emerging diseases arise from:

- Increased transborder traffic favoring the transmission of infectious pathogens and allowing broad geographic dissemination of novel microbes.
- Inadequacies of food handling at every stage – production, marketing and consumption – increasing risks of contamination.
- Demographic and lifestyle changes which promote overcrowding in marginalized neighborhoods characterized by poor housing, lack of basic environmental health services, and unhygienic conditions.²²

These last two factors are directly related to problems with the quality and supply of water associated with environmental degradation. These are problems which governmental policies have failed to address.

[‡] See <http://linksarg.com.ar/cuidemosalindec>

[§] See <http://www.ateargentina.org.ar>

Researchers from Harvard have recognized the limitations of classifying individual diseases as infectious, environmental, psychosomatic, auto-immune, genetic, and degenerative. They consider novel diseases as unexpected phenomenon deriving from changes occurring not just at the cellular level, but in the world at large, at the levels of ecology, climate, and economic system. They propose an interdisciplinary approach to illness which combines ecological, social, and biological parameters and includes complexity theory in the analysis of unpredictable phenomena. Such an approach would require that science incorporate other logics and rationalities in the analysis of time. The rationality governing social time is essentially that of the short term. Scientific and technological rationality work in longer terms. And the rationality of evolutionary dynamics in natural systems, by its nature, very long term.²³

Explanatory models need to be dynamic, systematic, and critical. Until now the various approaches to the population health – tropical medicine, epidemiological transition, and national health profiles – have each had their limitations. Since social inequalities (i.e. differences in social and economic status) condition the propagation and course of infectious diseases, explanatory models must link social inequality with health outcomes.²⁶

Unfortunately, modern society has not made substantial progress towards developing systems of sustainable development which might reduce the gap between rich and poor and thereby decrease the threat of the preventable and re-emerging diseases whose victims are usually the poor.²⁸ However, progress towards such sustainable development is now imperative. It might be accomplished by, for example, creating ethical markets which could reduce the gap between rich and poor or by reducing the threat of preventable and re-emerging diseases.

Diseases of poverty in Argentina

López Arellano and Peña Saint Martín have characterized the current Latin American context by the following phenomena: socio-epidemiological polarization created by the hyper-concentration of wealth; regression of health indicators as evidenced by the re-emergence of previously eradicated and/or controlled diseases

and the emergence of new pandemics such as HIV/AIDS and the spread of violence; poverty; and the increasing number of citizens without access to health services. These phenomena can be illustrated by modern-day Argentina.

The 2001 Argentinean economic crisis produced a dramatic increase in levels of poverty and destitution. These levels have yet to return to their pre-crisis values. The result is that diseases of poverty are re-emerging in places where poverty had long since ceased to be a problem. Despite attempts by politicians to keep data on poverty data from the public eye, health indicators reveal the magnitude of social vulnerability in Argentina.

Buenos Aires, Argentina's capital, offers an example of how social inequalities are manifested in differential health statistics. In the southern part of the city, the percentage of live births for mothers under 20 years old has quadrupled. Tuberculosis mortality is four times more common than in the north of Buenos Aires.** Similarly HIV/AIDS deaths are four times more common among those living in areas with the greatest unmet basic needs (UBN) when compared to areas where living conditions are better.³¹

While in Patagonia maternal morbidity-/mortality is 22 per 100,000 live births, in the northeast it reaches 84 per 100,000 live births.³¹

The presence of emerging and re-emerging diseases indicates that, despite the epidemiological transition towards increased development, the risks typical of developing countries are still with us. These diseases include zoonotic infections, viral diseases, vaccine-preventable infections, Argentine hemorrhagic fever, dengue fever, hemolytic uremic syndrome, and tuberculosis. These diseases should be analyzed within the context of a health emergency, as malnutrition, poverty, unemployment, and social inequities provide the ideal breeding ground for the appearance and propagation of these infections. While tuberculosis rates had been declining since 1982, in the past few years this decline has lessened. There is even been an increase in reports of congenital syphilis in the north of the

* Fifty per cent of deaths from tuberculosis occur in the 20% of the population from areas with highest UBNs. By contrast the 20% of the population living in areas with the least UBN accounts for only 10% of tuberculosis death.

country (Northwest and Northeast Argentina, NWA and NEA).³⁴ As a consequence the NEA provincial governments have put infectious diseases like dengue fever, yellow fever, and leishmaniasis back on the public health agenda. Something similar has occurred in the academic and official scientific community. For example, the Instituto Malbrán's 2007-2011 plan includes research into re-emerging diseases related to living conditions and poverty. The plan notes the imperative to address the social determinants of health as outlined by the WHO Commission on the Social Determinants of Health.

Health Problems of Rural Poverty

Hunger and Malnutrition

Epidemiological work has shown that rural populations are the most vulnerable to hunger and malnutrition. Among those most affected are persons of indigenous or African descent, those of lower educational level, and individuals with poor access to drinking water and basic sanitation.

Water & Sanitation

Problems with water supply are manifested through inequity in the distribution of irrigation water, water pollution, and, most fundamentally, lack of infrastructure to provide communities with potable water. These problems grow more acute with the ongoing expansion of the agricultural frontier, an expansion accompanied by land (and water) concentration, land clearance, and deforestation.³⁸

Official data document that water access problems are now generalized throughout Argentina. They affect both urban and rural areas. According to INDEC's Permanent Home Survey (EPH) in the first quarter of 2007 among homes in the major urban centers:

- 561,000 had no drinking water within the building
- 616,000 were within 300 meters of a garbage dump
- 801,000 had bucket-flush water closets or dry latrines.

These data come from provincial capitals and some of the larger cities (Rosario, Mar del Plata, etc.). One can only assume that the basic sanitary infrastructure in rural areas is worse.³⁹

Exposure to Agrochemicals

It is critical to link health problems with living conditions in rural areas because the toxicity of agrochemicals increases in populations with high poverty rates. For example, "according to the WHO, the acute toxicity of Endosulfan in rats is 4.3 times more severe when they are fed a protein-poor diet ... [This is] a finding which could be extrapolated to malnourished people with limited protein intake."³⁷

The increasing overuse of agrochemicals provides a context for any discussion of poisoning. 2003 saw two notable developments in the market for plant protection products. First, sales volume increased by 32%. Second, there was a marked increase in the importation of cheaper brands from little-known manufacturers. These products often came with minimal technical support or quality certification. The volume of such products has trebled in the last decade, with a marked increase in glyphosates applied to soybean.³⁹ This situation results from the absence of any governmental oversight over the proper use of these products.

Researchers at the University of Buenos Aires have demonstrated that the decision to utilize agrochemicals is made under pressure from suppliers. Farmers are unaware of the guidelines for proper storage and safe use. Poisonings and accidents result from a combination of internal (production, labor, culture, type of producer) and external factors (markets, laws, technology, health and public monetary policies).

From importation to application, workers and producers need continuous training in safe practices, including the need to use agrochemicals only intermittently. The whole chain of production needs to be considered: manufacture, packaging, transportation, storage, distribution, retailing, dispensing and application, and finally, proper destruction of agrochemical containers. Unfortunately the official body regulating the industry, the National Service of Health and Agricultural Quality (SENASA), considers the use of glyphosphates on soy crops to be safe.

Impact on children

As exposure of children to agrochemicals has grown there has been an increase in child poisonings. Children are exposed to chemicals at home, while accompanying their parents to work,

or when they themselves do farm work, such as fruit picking, de-budding, and so on.⁴¹ More often than not child poisonings go unreported and unnoticed. Sick children are not always taken to a health center. When they are, treatment is limited to the visible signs and symptoms. The lack of protection afforded children is so widespread that in 2007 the very first ‘protocol of intent’ was signed to develop strategies for combating rural child labor.⁴²

It should be noted that UATRE, the rural workers union, has – on its own initiative – developed preventive modules on health care which emphasize that children need specific treatment. This program accepts the involvement of children in work as something “inevitable.” The solution is presented in terms of proper medical diagnosis: “Working children are exposed to extremes of temperature, humidity, and unhealthy working conditions. This favors the transmission of diseases. Poor nutrition can result in serious health problems among which are delayed development. This can limit the development of the brain and other elements of the central nervous system. Working children can suffer musculo-skeletal disorders (due to ergonomic stress), respiratory and gastro-intestinal disorders, headache, fatigue and visual problems.”⁴³

A similar posture has been taken by the government. After a recent rural crisis, the government was astonished to discover that slave labor and child trafficking existed in the countryside. Of course, the government’s new found concern in this case is totally unsupported by any concrete measures.

Medical studies on rural health

French researchers have shown that the use of glyphosate activates oncogenic processes. This does not constitute proof that glyco-phosphates cause cancer. Cancer can only be diagnosed when there is clinical evidence of disease; when there is only one cancerous cell it is premature to diagnose cancer. Clinical disease can take 30 to 35 years to develop. Glyphosates and other similar products have only been in use for 10 or 15 years, so it is not yet possible to fully measure their oncogenic potential.⁴⁴

On the other hand, an Argentine researcher, Dr. Gianfelici has noted that since the introduction

of genetically modified soy in 1995, there has been a marked increase in cases of acute poisonings due to agro-toxic chemicals. These typically present with respiratory and skin symptoms. In addition he highlighted the growing frequency of genital abnormalities in children. These include undescended testes (cryptorchidism), micro-penis, and hypospadias.⁴⁵ These findings have yet to be correlated with an understanding of how social determinants of health such as poverty, job quality, living conditions and environment, affect processes of health, disease, and medical care. Without this correlation, Dr. Gianfelici’s observations could be seen as mere biomedical reductionism.

Researchers at the private medical school of the Italian Hospital†† have also examined the relationship between reproductive health and environmental factors among rural populations of the Pampas. They were able to show that the incidence of congenital malformations was significantly increased when compared to the national average; this increase, however, was limited to hormone-dependent malformations. Gastro-intestinal cancer rates – gastric, hepatic and pancreatic – were also significantly higher in the Pampas.⁴⁶ Their study, however, had several limitations:

- Environmental factors such as water and soil were not taken into account.
- The statistical model used by the investigators was inconsistent incorporating both ‘mono-causal’ and ‘multi-causal’ analyses.
- The effect of living conditions (unmet basic needs, families in crisis, social vulnerability, etc.) was ignored.
- It did not control for the influence of other socio-environmental factors on cancer type.
- It erroneously considered that proximity to a risk (silo or storage plant) is *per se* a determinant.

†† Centro de Investigaciones en Biodiversidad y Ambiente (ECOSUR), Instituto Universitario Italiano de Rosario, Faculty of Agronomy of the Universidad Nacional de Rosario, Instituto Nacional de Tecnología Agropecuaria (INTA), INSERM U 675, Université du Rennes I, France.

A third study carried out by environmental physicians concluded that “we could not establish a correlation between symptomatology and the affected population in Santa Fe. On questioning, the Director of the Neurotoxicology Center reported that the required information either did not exist or was spread out among various different agencies. The Director noted that there are not enough qualified professionals, as evidenced by the high level of under-recording and under-reporting.”⁴⁷

Socio-medical studies of the rural sector

The author was unable to locate any published work dealing specifically with rural health problems in Central Argentina. These problems are not addressed in any official report either at a local, provincial, or national level.

Rural health in the Central region has, however, been of interest to the Argentinean social medicine community. The Medical School at the National University of Rosario offers a course on “Social and Environmental Health” which includes a discussion of rural health. In the absence of primary literature the course relies on secondary materials and expert speakers on environmental issues. The organizers of this course have not undertaken any primary research nor developed validated socio-environmental indicators.

The Medical School in Rosario is also home to the Rural Workers’ Health Group, the Argentinean Federation of General Practitioners (FAMG), and the Department of Medicine and Society. These groups have joined together with the FAO and Fodepal in a project called “South Watch: For sustainable rural development.”^{††} South Watch has used a sophisticated analytic approach to demonstrate how official statistics mask the extent of chronic poisoning by agrochemical products. This official blanket of silence only adds the difficulty of accurately assessing the problem, leaving rural workers, farmers, and even health personnel in ignorance.

As documented by South Watch, the problem begins with the family medical records maintained by the Union health service. These records show that the most frequent reasons for medical consultation are: cardiovascular disease, coronary

artery disease (including heart attacks and angina), spinal column disorders (herniated disks), and injuries (patellar fractures, arthritis of the hip, ligamentous tears of the knee). However, the health service statistics do not record exactly how the workers become ill, suffer accidents, or die. They record diseases; they ignore etiologies.

For their own part, public health records suffer from the typical inadequacies of morbidity and mortality data: under-recording, delayed reporting, and the generation of mountains of data which contribute nothing to a true picture of the rural health situation. For example, the National Poisoning Prevention and Control Program collects data from twenty-one Poison Control Centers located in seven provinces. These centers are all located in urban areas. Seventy percent of their data comes from telephone consultation rather than notifications by professionals and medical institutions.

These problems compound the practical impossibility of scientifically “proving” that a given toxin causes a given disease. Most of these health effects are quite non-specific, they occur after a long period of latency, and for all practical purposes there is no rural population totally free of pesticide residues.

Final considerations

When the Economic Commission on Latin America and the Caribbean (ECLAC) reported on current and expected advances in the reduction of destitution and extreme poverty, it noted that there were no Argentinean data on poverty for the 2003-2005 period. It also remarked that, despite Argentina’s signature agreeing to the Millennium Development Goals, the government continued to report data on only in terms of national averages. Separate data are not reported for rural and urban areas because household surveys are not conducted in rural areas or among indigenous populations. In contrast, rural surveys have been conducted in Ecuador, Panama, Uruguay and Paraguay.⁵³

In the meantime, soybean production continues to increase, boosted by international demand. Soy generates income for producers and provides the State with tax revenues for public works and social policies. Unfortunately, the cultural and political context does not favor critical reflection

^{††} www.observatoriodelsur.unr.edu.ar

on productive, environmental, social and health sustainability.

Minister of Agriculture Carlos Cheppi himself recognized the existence of the problem in his Senate testimony: “The growth of soybean production in the 1990’s was not sustainable. [...] It is not ecologically possible to continue at current soybean production levels of 96 million tons. The direct sowing of almost 3 million hectares is draining the soil of organic matter and nutrients. Under the current system, only 10% of farmers practice crop rotation and land fertilization. The problem lies in the land structure. Sixty percent of the land is leased; in no other country in the world does this figure exceed 30%. Renters have no incentive to invest in crop rotation and fertilizer, since such investment would only reduce their profits.”⁹

These facts are worrying because “[e]cosystems adapt genetically. Animals live within their specific niche, and genetics provide them with positive knowledge to survive in that niche. Within the food chain, each animal knows exactly how to obtain its food and protect itself. Animals do not eat foods which are poisonous to them. They know how to distinguish between good and bad foods. We humans, however, adapt ourselves culturally. We have no niche or genetic information enabling us to obtain food and protect ourselves. We do not belong to a food chain. Our population is not confined in niches. We are not born with genetic information about which plant is poisonous and which is not. We acquire this knowledge through our culture since we are members of no particular niche, hence the lengthy period of human infancy in comparison to other mammals.”⁵⁰

Our cultural nature has also led us to use agrochemicals indiscriminately, disregarding the impact they might cause.

Analyzing cases of chronic intoxication is of course not the same thing as measuring physical diseases (medical disorders, accidents or mortality) or monitoring the conditions and environment which increase the likelihood of accidents or disease. However, public and private health systems as well as the social security system currently lack any approach to this subject that has the necessary scientific rigor, magnitude, and depth which the subject demands. No progress has

been made in this regard, either, by the university or by CONICET researchers.

For this reason we should think of the traditional approach to health surveillance as being the first barrier to be overcome. Traditional approaches conceive the problem in essentially individualistic terms: the case arises from some negative process which is the disease. Health monitoring, by contrast, takes into consideration the key processes of collectivities, specifically protective or destructive health determinants.⁵¹ The second approach would seem more appropriate for the study of rural health problems. A system which produces ever deeper social inequities and where the conditions of the working class produce a continual affront to their human rights, such a system also destroys health. The monitoring perspective allows non-physician specialists to bring their expertise to the work of addressing those social determinants which are protective of population health.

In short, there is a pressing need to use theoretical models appropriate to the complexity of the problem, to assign more funding to interdisciplinary and inter-institutional research and development, to develop participatory epidemiological monitoring in partnership with rural communities, to monitor agro-ecosystems using collectively agreed-upon indicators which incorporate the experience of the communities involved, and to make the university and its academics change agents through work of critical reflection and continuous professional development.

References

1. Sánchez L. Alberto y Pablo Bertinat (2007), Una mirada sobre la sustentabilidad del patrón productivo a las exportaciones argentinas, in: Cristina Díaz & Eduardo Spiaggi (editors). *Ruralidad y desarrollo en la región pampeana: estrategias para la sustentabilidad*, Editorial UNR, Rosario, October 2007.
2. Rossi, Rodolfo (2006), Third Mercosur Soybean Congress - Mercosoja, held in Rosario (Argentina) 27-30 June.
3. Cátedra Observatorio del Sur: hacia un desarrollo rural sustentable (2005). www.observatorio-delsur.unr.edu.ar
4. García Delgado, Daniel (2007), Fin de la era del petróleo barato y el dilema de los Biocombustibles, *Ciencias Sociales, Revista de la Facultad de Ciencias Sociales/UBA*, No. 68, pp.: 6-8.

5. Acción de INCUPO (2007), Queremos seguir desarrollándonos en nuestro lugar: Mesa de Tierras del norte de Santa Fe, Reconquista (Sta. Fe), No. 424, pp.: 17-18.
6. Mascheroni, Ricardo (2007), No creo en la contaminación, pero que la hay, la hay, Semanario Peripecias No. 41, 28 March 2007.
7. Lopez Cattaneo, Alfredo (2007), Industrial accidents: the continuous sinisterness in increase, Magazine Security, YEAR LXVI N^a 395:18 – 24.
8. Ferrareses, Laura (2007), The bulletin of qualifications that gives World-wide the Economic Forum locates to Argentina in position 69 between 125 countries; this gives rise to comparisons that they hurt and they astonish, Newspaper the Nation, Buenos Aires, Web mentions: http://www.lanacion.com.ar/Archivo/nota.asp?nota_id=878894.
9. Ministry of Work, Use and Social Security (2006), Work, occupation and use: wages, companies and use 2003-2006, Series Studies 5, Labor Undersecretary of Technical Programming and Studies, Buenos Aires, September, pp.: 127-151.
10. Silva, Maria Alejandra (2008), Familiar Agriculture and viable development: a glance from the protective policies of the decent and healthful work, IV Congress the International of Network SIAL "Feeding, Agriculture Familiar and Territorio" ALFATER 2008, organized by INTA Balcarce, Mar del Plata, Buenos Aires, from the 26 to the 31 of October.
11. Laboratorio/n line, (2008) Year VIII, I number 21, Buenos Aires, Argentina. Web mentions: <http://lavboratorio.fsoc.uba.ar/>
12. Jonestur (2008). For many, the real inflation of 2007 went of 25%, Interview to the Dr. Artemio Lopez of the Consulting X. Jonestur, Consultation done Thursday 9 of January of 2008 web site: <http://www.jonestur.com/>
13. Ferraro, Rodolfo (2005), Reflections on the relation between poverty and health, científico Bulletin, Supl. Of the Newspaper of the Hospitable World, Association of municipal Doctors of the City of Versus. Ace., Year 10 - N^o 43 - March.
14. IPN (1999), Prevention and emergent and reemergentes new disease transmission and contagion control, School Superior of Infirmary and Obstetrics, IPN, Mexico, Web mention: www.esco.ipn.mx/map/peccle/xtras.
15. Marquess Marilia, (1995), Doenças infectious emergent kingdom does not give complexidade: implicações for ace political scientific and technological, CAD. Saude Publ., Rio de Janeiro, 11 (3): 361-388, jul/Seth.
16. Farmer, social Paul (1996), Inequalities and emergent infectious diseases, Emerging Infectious Diseases, Journal National for Center Infectious Diseases, for Center Diseases Control and Prevention, Volume 2, I number 4, October-December. Last revised June 20, 2001.
17. Editors, Social Medicine (2007), Preventable Poverty, diseases, undernourishment and deaths: global perspective, Volume 2, Number 4, October.
18. Firewood, N., Abel M., Hammock E., Liotine M. and H. Mer it (2007), Primary Attention of the health, public health reality, Scientific Bulletin, Supl. Of the Newspaper of the Hospitable World, Association of municipal Doctors of the City of Versus. Ace., Year 12, N^o 54, June.
19. Argentina sets out to reach the objectives of the millenium (OPS), Report of the Forum of Investigation in Health of Argentina (FISA), Web mentions <http://www.fisa.anm.edu.ar/>
20. Ortiz, Zulma, (2005), The diseases of the poverty from epidemiology, Doctors TODAY, Magazine of the Medical Confederation of the Rep. Argentina, National Academy of Medicina/CEDES.
21. Montenegro Raul (2005), The biocides used in cultures of transgenic soybean, Web mentions <http://www.msal.gov.ar/hm/site/pdf/lanteri.pdf>
22. Safe, Ma. Solitude (2006), Earth, work and justice, BREACH, reproduced in the Web Site: www.rebellion.org/noticia.php?id=25432
23. IDESA (2008), MORE THAN HALF MILLION HOMES DO NOT HAVE POTABLE WATER, I number 237, Buenos Aires, Argentina
24. Huerga, Miguel and Sebastián San Juan (2004), Report: The control of the plagues in Argentina Agriculture, Agricultural sectorial Study rural BM/FAO, Versus. Ace...
25. Moya Mariana and J. Souza Casadinho (2007), The absence of information and qualification on the risks of the pesticides, their incidence in the manipulation and impact in the health, V interdisciplinary Days of agrarian and agro-industrial studies, CIEA-IIHES/Facultad de Ciencias Económicas/UBA, realised in this high house of studies during days 7, 8 and 9 of November.
26. Pregón (2007), A joint effort to fight to the rural infantile work, Year I SAW, N^o 43, September 2007, pp. 16-18.
27. UATRE (2007), The health of the children and the dangerous work, Union of workers UATRE, Web mentions: <http://www.uatre.org.ar/ginfante.htm> Consulted: 20/01/2008.
28. Almeida, Mónica (2007), The Glifosato brings about the first stages of the cancer, Ecoportal, web site: <http://salud.ecoportal.net/content/view/full/67940>
29. Gianfelici, Darío Roque (2005), The Inadequate Use the Agro-chemical Poisons In You will work De Soja and Its Effects On the Human Health, Communication For the Assembly By the Health Of the Towns, Cuenca, ECUADOR.
30. Biasatti R., Cloquell S., Gonza'les C. and Light Multigner (2006), Identification Of Relations Between Rural Health and Exhibitions To Environmental Factors In Pampas Humid (Argentina). Paper Divides 1: Biomedical aspects; Rosary (Sta. Faith)

31. Atmosphere secretary and Viable Development, OPS and AAMMA (2007), The problem of agrochemical and their packaging, incidence in the health of the workers, the population exhibited and the atmosphere. Available at:
<http://www.ambiente.gov.ar/archivos/web/UniDA/File/LIBRO%20Agroquimicos.pdf>.
32. LEON, Arthur (2008). Progresses in the reduction of the extreme poverty in Latin America: Dimensions and policies for the analysis of the first Millennium Development Goal. Cepal Division of Social Development.
33. INTA (2008), Exhibition of Ing. Cheppi in the Senate the 10 of 2008 July, Infocampo, Web mentions:
www.infocampo.com.ar/Agricultura/14670.
Consulted day 21 of June of 2009.
34. Angel, Felipe (2004), The human of the human (test next to the epistemic resilience of the environmental thought), San Antonio, Cali, Colombia.
35. Breilh, Jaime (2003), Of the conventional monitoring to the participatory monitoring, *Ciência & Saúde Coletiva*, v.8 n.4, Rio de Janeiro, Brazil



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