

Social Responsibility in the Use of Pesticides: The Case of Brazilian Agribusiness

Fernando

Denise Barros de Azevedo, Ph.D¹, Jersone Tasso Moreira Silva, Ph.D², Guilherme Cunha Malafaia, Ph.D³
and Márcia Leopoldina Gasperin⁴

Abstract

The objective of this study is to characterize and analyze the farmers and commercial personnel's actions with relation to the social responsibility of pesticides' commercialization in the South Region of Brazil, specifically in the region of Caxias do Sul. Companies whose principles are based on the social responsibility and social environmental consciousness are usually more respected by customers, suppliers and the society in general. The research method is exploratory and the data was obtained by 90 questionnaires applied to farmers and 30 to employees of pesticides supplier companies in Caxias do Sul. The results have shown that despite some positive factors, many negative factors still prevail with respect to social responsibility, such as a deficiency in the companies' human resources management.

Key words: Human Resources, Social Responsibility, Agribusiness, Agro-toxics.



Available online

www.bmdynamics.com

ISSN: 2047-7031

INTRODUCTION

Social responsibility means having socially responsible actions by its members, charitable activities and organizational commitments with the society in general and more intensively with those groups or part of the society in which there are closer relations. Being an innovative activity, agribusiness shows a strong growth in the Brazilian economy that accounts for one in three Reals (Brazilian currency) generated in the country. According to the IBGE (2009), agribusiness accounts for 33% of the GDP, 42% of total exports and 37% of jobs in Brazil. In recent years, few countries have had a growth so significant in the international trade of agribusiness as Brazil.

The majority of rural enterprises jobs, except for pruning, involve the use of agro-toxic substances at one stage or another. In the nurseries, where the seedlings are raised, it is mainly fungicides that are used, on an ongoing basis. Preparing the land for planting involves the use of chemical herbicides, fertilizers and insecticides. After the trees are planted, agro-toxic chemicals continue to be applied for a year in order to control the growth of weeds. Finally, when the trees are thinned or logged, herbicides are used once again to eliminate the sprouts.

By analyzing the aspects of the pesticides use, it is necessary to consider the undesirable impacts on the environment and on human or animals' health. The lack of information seems to be the major cause of the effect of pesticides on the environment, beyond their intrinsic factors. Pesticides have been developed for biocide action, and are potentially harmful to all living organisms; however, their toxicities and behaviors towards the environment vary widely. These effects can be chronic, when they interfere with life expectancy, growth, physiology, behavior and reproduction of organisms and / or ecological. It is known that there is an interference of pesticides on the ecosystem dynamics, such as decomposition processes of organic matter and soil aeration, nutrient cycling and water eutrophication.

Farmers, who use and handle pesticides in their enterprises, also have great responsibility regarding the use and proper disposal of their recipients. Most packaging is washable and therefore it is essential to triple wash them before the return and proper disposal. According to NATIONAL INSTITUTE FOR PROCESSING OF EMPTY CONTAINERS (2011), a farmer must prepare the packaging to return them to the receiving locations. They also have to consider that each type of packaging should be treated differently.

¹ Brasília University (UNB). Research Professor. Department of Agronomy and Veterinary Medicine / Agribusiness PROPAGA. Campus Universitário Darcy Ribeiro - ICC - Ala Sul. E-mail: deniseazevedo@unb.br

² FUMEC University. Research Professor, Department of Business Administration, Av. Afonso Pena, 3880 - Cruzeiro - Belo Horizonte, 30310.009, Minas Gerais, Brazil. E-Mail: tasso@fumec.br

³ Researcher at Embrapa, Campo Grande / Researcher and Professor at Caxias do Sul University. BR 262 km 4, Vila Popular 79002-970 - Campo Grande, MS - Brasil - Caixa-postal: 154. E-mail: gcmalafaia@gmail.com

⁴ Serra Gaúcha Business School, Bachelor in Business Administration

This problematic issue concerns the organization structure, commercialization units and how farmers use pesticides in their businesses. Therefore, the objective of this study is to characterize the farmers and traders' actions with regards to the social responsibility involving the use and the pesticides trade in the region of Caxias do Sul.

LITERATURE REVIEW

Social Responsibility in Agribusiness

Agribusiness is a set of businesses related to agriculture in an economic point of view. Thus, the concept includes suppliers of goods and services for agriculture, farmers, producers, distributors and all of those involved in the generation and product flow of agricultural origin to the final consumer (GALLADO, 2005).

Social Responsibility has been gaining momentum in the business strategy discussions, showing itself as an efficient and ethical strategy for the achievement of excellence and prosperity by organizations, enabling them to have greater competitiveness. Acting with social responsibility does not mean philanthropy. The socially responsible conduct goes beyond the obligations in relation with the human capital, environment and the communities, since improving their welfare has a positive impact on the company's welfare (ASHLEY, 2005).

Maia (2005) confirms this saying that social responsibility in Brazil is studied in the academic field as well as in the corporate sector and that it can be considered as an instrument that offers the firm not only better operational results but also financial strength, better products and services, competitive prices, good customers services, qualified personnel while promoting better life quality for the present and the next generations.

However, it is necessary to understand that philanthropy is not social responsibility. According to Melo Neto and Froes (2001), philanthropy is a pure action of assistance even though it is considered a voluntary action and does not bring long term benefits to the organization. Grajew (2002), affirms that campaigns and philanthropy promotion like donations, usually have limited efficiency and its beneficiaries are just receptors or resources and donations.

Philanthropy is in fact the beginning of social responsibility; many firms use this kind of assistance because this attitude does not use controlled tools to evaluate the resources that are being used. Melo Neto & Froes (2001) show in Table 1 the differences between Philanthropy and social responsibility.

Insert table 1 here

Currently, farmers as also their suppliers are concerned in increasing their productivity in areas where they operate, while working in a manner that the soil will keep producing over a longer period of time. This has been the practical vision of sustainable agribusiness, avoiding the loss of soil fertility and reducing the usage of available water, as also protecting the biodiversity of the region in which it operates (MARGULIS, 2006).

Basically, it is possible to classify the pesticides effects as acute and chronic, the latter still being poorly documented, although it is devastating to the human body. There are at least 50 pesticides that are potentially carcinogenic for humans. Other effects are delayed neurotoxicity, damage to the Central Nervous System - CNS, fertility reduction, allergic reactions, cataract formation, evidence of mutagenicity, liver damage, teratogenic effects among others. These form the morbidity and mortality framework of those exposed to pesticides.

Companies that do not meet the commitment to social responsibility lose the customers' credibility. When the problem is the internal social responsibility, the first effects are: the deterioration of the organizational climate, general lack of motivation, the emergence of conflicts, strike threats, low productivity and the increase of accidents, and high rates of absenteeism and delays. Problems with external Social Responsibility cause harmful effects in terms of accusations of social injustice, consumers' boycotts, loss of customers, suppliers and dealers complaints, declining sales, extra expenses with environmental liabilities, lawsuits and other factors.

In agribusiness, competitiveness has become even greater as these companies work with pesticides, that, when used properly, do not cause major environmental impacts. Due to these problems, in 2001 the National Institute for Processing Empty Containers (NIPEC) was created. This was a fundamental step to place Brazil among the countries that best addresses the issue of pesticides empty containers. The

emergence of this entity was motivated by the Law No. 9.974/00, which brought clear guidelines on the final destination of this type of packaging, dividing responsibility for the proper disposal of all of those involved in agricultural production in Brazil: farmers, distributors, industry and government (NATIONAL INSTITUTE FOR PROCESSING OF EMPTY CONTAINERS, 2011).

Human Management Resources and Proper Pesticide Disposal

In agribusiness, the human management department has been in recent times defined as Talent Management, which is responsible for managing all of those that are comprised with it, in order to respond to the demands of skills, commitment and results. People management in agribusiness involves several activities, including the search for qualified professionals. Employees must be motivated to remain in the organization, as well as being productive and proactive, since it is only through this kind of professional that an organization can achieve its goals.

The Brazilian agribusiness sector is a great absorber of manpower, which includes people of various skill levels. The concern about work life quality should be continuous in the case of companies in the agricultural sector, where the guidance on the use of pesticides and other inputs should be carefully taught, as well as the instruction for using the Personal Protective Equipment (PPE). Those, among other aspects, will guarantee the desired quality.

Some functions are riskier than others and are subject to health hazards, such as the agribusiness companies that sell pesticides and agrochemicals. Usually, appropriate or inappropriate use of pesticides is the main focus addressed by all that are involved, from the manufacturers through the technical / institutions, merchants and even the farmer. The proper use of pesticides should aim at better agronomic results with the increase of productivity, improvement of crop protection, and, at the same time, avoid the potential problems of toxicity, environmental pollution and the contamination of food with prohibited residues.

The farmer has also a great responsibility in the use of pesticides and the proper disposal of the packaging. The main reason to give the proper disposal of empty pesticide is to reduce the risk of human health and environmental contamination. As most packaging is washable, it is essential to wash it before returning it for the proper disposal. The producer must prepare the empty containers and return them to the proper receiving units, since each type of packaging should be treated differently (NATIONAL INSTITUTE FOR PROCESSING OF EMPTY CONTAINERS, 2011).

Empty containers must be returned to locations indicated by the dealer's invoice form, along with their labels and when the farmer collects an amount of packaging that justifies traveling. The farmer has up to a year to return the empty packaging after consumption. If there is leftover product in the box, then he can return it within six months after expiration.

It is not only the farmer who has responsibilities with the proper use of pesticides and distribution channels, since also the manufacturer and the government have major responsibilities. The distribution channels have the obligation to indicate, in the invoice, the delivery place when selling the product and ultimately guide and educate the farmer. The manufacturer has the duty to collect the empty containers that were returned to the receiving units, give proper disposal (recycling and incineration), guide and educate the farmer. The government has to monitor the disposal operation, issue operating permits for Receiving Units, according to the competent departments of each State, in addition to supporting the efforts of the farmer's education and awareness of their responsibilities within the process. (BRAZILIAN INSTITUTE OF ENVIRONMENT AND NATURAL RESOURCES, 2011).

RESEARCH METHODOLOGY

The city of Caxias do Sul was chosen because it is the largest municipality in the mountainous region of Rio Grande do Sul State. Caxias do Sul is located on the slopes of the southern plateau, distant 131 km from Porto Alegre, the state capital.

The methodological approach used in this study was exploratory with a qualitative approach. The exploratory study helps to solve some difficulties in an adequate research of the reality. The used sampling technique was the non-probabilistic convenience sampling, which aims in getting a sample of convenient elements in the selection of sampling units which is largely dependent on the interviewer.

The data were collected in two companies that sell pesticides and farmers in the region. Two separate questionnaires were used, being one for businesses and another for farmers. The interviews were carried out during May of 2011 and each interview lasted, in average, 15 minutes with the farmers, and 10 minutes with each seller. Ninety farmers and thirty vendors were interviewed.

RESULTS

The first part of this research analyzed the profile and the answers given by the farmer's agro-toxic and pesticides procedures. The results have shown that from 90 interviewed farmers, 57 are grape growers, 17 are peach growers and 16 are apple producers with an average area of 3.4 hectares, 8.9 hectares and 10.1 hectares, respectively. In terms of age, it was observed that the ages varied from 48, 46 and 49 years for the grape, peach producers and apple growers, respectively.

According to the questionnaire results it was observed that 36% of the farmers are aware of the harm caused by pesticides for both man and environment, but do not follow the rules of use and packaging disposal of the pesticides, which is worrying, because they might be polluting the soil and water, as also putting the farmer in a situation where he has a greater risk of being contaminated. The results also show that 25% are aware and follow the rules of use and disposal, followed by 21% that said that they are aware but do not believe that it offers great danger and 18% are unaware of the harm caused by pesticides when they are not used properly.

In terms of applying the triple washing technique, the results have shown that 27% of the respondents are aware of such technique, but do not apply it. Another 24% answered that they just know the technique. The rest of the results show that 18% said that they are aware and apply it; 18% do not know the technique and the last 13% of the respondents are aware but do not know how to apply it. This is due to the fact that the seller of such products has to reach the company's selling goals, leaving very little time to explain and even encourage the producer to use the triple washing. It was also asked if the farmer used the triple washing technique on a day to day basis and the answer was that 63% said that they do not use the technique and 37% said that they do use this technique.

To evaluate the salesperson level of technical knowledge, such as managers and agronomists that work for firms that commercialized the agro-toxic products in town, the results have shown that 56% of respondents were rated as good, 34% as very good, 7% as indifferent and 3% as bad.

As for the return of empty containers, as indicated in the receipt, it is observed that 51% of respondents only return the empty containers of pesticides occasionally, 23% said that they always return them, 20% never return them, and 6% did not have information on the procedure for returning the empty containers.

As for the agronomist prescription, 61% said that they always receive the document when purchasing pesticides. However, 27% said that it is not always given, 8% of the respondents affirm that they do not know what an agronomist prescription means, and at last, 4% said that they never received such a document. In terms of reading the prescription it is observed that 52% read it once every so often, 45% do not read it and 3% always read it.

When questioned about the usage of agro-toxic application personal protective equipment, 58% of the respondents affirmed that they always use it, followed by 34% that said that they do not use it, 6% only use it when they remember and 2% use only part of the equipment.

As for the hygiene after applying the pesticides, it is observed that 38% wash their hands and faces, 30% said that it depends on the degree of the product's intoxication, 30% always take shower and wash the equipment and 2% do not take shower. In terms of pesticides buying frequency, the results have shown that 46% buy them every 15 days, 28% weekly, 23% monthly, 2% annually and 1% daily, respectively.

The second part of this research analyzed the profile and the answers given by the firm's personnel that sell agro-toxic and pesticides products. The results have shown that the average firm's personnel age, according to the results, are characterized as having managers as the oldest (46 years) followed by internal sellers (27 years), external sellers (25 years) and at last the administrative personnel (24 years).

When questioned if the firm is socially responsible, 83% believe that it is responsible, 14% are not informed about such subject and 3% do not have an opinion on such matter. In terms of awareness of the

negative consequences of misuse of agro-toxic and pesticide, all the respondents confirmed that they are aware of such consequences.

According to the results, it was observed that 68% of the respondents inform the customers the proper procedure to dispose the containers, followed by 17% that said yes because it is their responsibility, 7% said no because it was not their job, 6% said no and 2% said that they did not have training.

Considering the involvement of Human Resources on social responsibility, 57% of the respondents stated that the area is involved with corporate social responsibility, 33% said that HR is always offering training programs focusing on social responsibility in the organization and only 10% did not believe that HR should be involved.

As to the technique of triple washing, 90% of the employees said that they have knowledge, 7% said they do not have much knowledge regarding this technique and 3% responded that they know this technique.

It was observed that 47% of employees indicated and explained to their client (farmers) on how to proceed with the triple washing, 43% responded that they do not always explain and 10% said they never explain to the client the technique of triple rinsing.

Finally, 50% of the respondents said that the company they work for has a place to gather empty containers, 44% answered that they have a totally adequate place and 6% have no knowledge or no appropriate place to receive the empty containers of pesticides. The ideal case would be that all companies should have a suitable place for the collection of empty packaging along with the purchase invoice of the pesticide.

CONCLUSION

The study aimed to characterize the actions of farmers and business partners with respect to social responsibility, focusing on the pesticides commercialization. The results were not satisfactory since most do not follow the rules for the usage and packaging disposal. The lack of information seems to be an aggravating factor for the neglect use of toxic chemicals in agriculture. The farmer does not show much interest when it comes to social responsibility by not reading information from an agronomist and not following the rules for use and disposal of pesticides packages. The survey results also showed that the producer does not use the technique of triple washing, which is considered as one of the most important forms of environmental preservation. Still many problems related to social responsibility are not only of the companies that commercialize pesticides, but also of the farmers that buy and use them.

There is an interference of pesticides in the ecosystem dynamics, such as breaking processes of organic matter and soil respiration, nutrient cycling and eutrophication of water. However, little is known about the final behavior over the processes and products in the environment's degradation. The data of environmental contamination, that seems more concerned about public opinion in developed countries, are the air contamination primarily from soil and water. In Brazil there is virtually no monitoring of the aquatic systems, or monitoring or treatment of water consumption to detect or eliminate pesticides, and most likely the presence of pesticide residues.

The human resources department in the companies that sell pesticides could certainly be more involved, offering refresher courses, awareness programs and mainly providing manager training informing that social responsibility is a competitive factor. The farmer also has a great responsibility in the use of pesticides and the proper disposal of packaging and they should have proper training as well. Another negative aspect is the fact that the farmers' failure in using the triple washing, since this procedure prevents human and environment contamination.

It was observed a contradiction in the farmers responses since the answers showed that the degree of the salespeople, managers and agronomists are good; however the respondents also said that they do not return the empty containers at the disposal locations on the invoice (as determined in the invoice the disposal locations), and many of them have no knowledge about the return. That is, we noted that there is a lack of communication and even commitment by both organizations in encouraging the preservation of the environment and human health.

Another negative factor is that most farmers keep the pesticides along with other products in the shed; this can lead to poisoning if a package is opened or saved and even if there is some kind of leakage. It

would be more correct, as it is stated, that for this kind of toxic product, there is the necessity of having a suitable place to keep this product and that it should not be mixed with other kinds of goods. A positive factor was observed when farmers apply pesticides according to the agronomist's indication. Here, it was noted, during the interview, that the producers were concerned with the application at the correct time for each crop, because with an incorrect application the result would be the loss of the entire plantation.

SUGGESTION REMARKS

The suggestion is that government should elaborate programs using alternative methods for controlling pests thus reducing the use of pesticides as well as training programs to help farmers to obtain information on rotating culture in mechanized areas immediately after harvesting, enhancing the organic chemical and physical conditions of the soil. Government programs can also help to reduce losses of nutrients released by the crop's decomposition residues, improving fertility, promoting the permanent covering of soil, reducing soil temperature and water loss, reducing the incidence weeds, promoting integrated pest management, diseases and weeds as also promoting the soil's diversity. Government programs should also inform the laws about the destination of the empty containers.

As for the companies that commercialize pesticides, we propose a bigger involvement of the human resources departments in order to develop awareness projects for the community in general, take up the schools (helping the schools with support materials), support material, where the children will learn about the importance of environmental preservation and the proper use of pesticides. It is also important to provide ongoing training within organizations, in which the employees will gain awareness of the dangers pesticides offer to society if used inappropriately and adopt in the company's culture the necessity of being socially responsible.

With these measures the result will be positive over time, as a company that turns out to be socially responsible has a greater competitive advantage and will still retain their customers, if the interest in preserving the environment and human health is shown.

REFERENCES

- ASHLEY, P. A. (2005). "Ethics and Business Social Responsibility". São Paulo: Saraiva. pp. 340.
- GALLADO, A. A. C. (2005). "Agribusiness". São Paulo: Atlas, 2005.
- GRAJEW, O. "Ganhos e custos da responsabilidade social". Economic Value. Rio de Janeiro. Retrieved January 29 jan, 2012, <http://www.valoronline.com.br>.
- BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS. Retrieved December 2, 2009, from <http://www.ibge.gov.br/cidades>.
- BRAZILIAN INSTITUTE OF ENVIRONMENT AND NATURAL RESOURCES. Retrieved September 10, 2011, from www.ibama.gov.br/qualidade-ambiental/areas.
- NATIONAL INSTITUTE FOR PROCESSING OF EMPTY CONTAINERS. Retrieved September 30, 2011, from <http://www.emdiv.com.br>.
- MAIA, C. (2005). "Social Responsibility in Brazil". Exame magazine.
- MARGULIS, S. (2006). "A regulamentação Ambiental: Instrumentos e Implementação". Working papers. DIPES/IPEA.
- MELO NETO, F. P.; FROES, C. (2001). "Corporate social responsibility management: The Brazilian case". Rio de Janeiro: Qualitymark, 2001.

Table 1. Differences between Philanthropy and Social Responsibility

Philanthropy	Social Responsibility
Individual and voluntary actions	Collective actions
Charity purposes	Citizen purposes
Assistance bases	Strategic base
Restricted to rich entrepreneurs	Extensive to every one
Individual decision	Consensual decision