LANDSCAPE ARCHITECTURE BY MACRO-OUTLINE: CROSSING AGRICULTURAL SCIENCES AND GEOGRAPHY FROM BRAZIL

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ABSTRACT

Through an approach of landscape, this paper organizes one of the scales gathered and questioned as "outlines". The term landscape has contained polysemic mindset, as much carrying several viewpoints and diversity of perspectives. Also, Landscape Architecture professionally constructed "bridges" between the natural sites and the urban sights, and *wilderness* is one ground concept to Brazilian Conversation Units (UCs) and biological reserves from Brazil. Thereby, this literature analysis focus on political, historical and spatial aspects to cross Agricultural Sciences and Geography.

Keywords: soil conservation, agroecology, geography, agricultural sciences.

INTRODUCTION

Law on Biodiversity

For protecting Brazilian biodiversity, the "New Law on Biodiversity", Law 13,123 of May 20, 2015, currently oriented through Decree No. 8772 of May 11 from Federal Republic of Brazil, has regulated to protect and to preserve the environmental resources from Brazil, as much biological heritages of nature and derivative services as relevant to national purposes. This law promulgated premises of preservation of Brazilian biological resources, reserved them to the environmental services and the national responsibilities of biodiversity conservation, nature maintenance, also sustainable uses.

The access of Brazilian biodiversity inserts at the context of national safeguard. These properties and heritages legally deputed federal institutions to administrate, authorize and, accept accesses for biological reserves whose are mostly sited in Conservation Units (UCs). Preserving the uses and purposes of communities involved, Brazilian genetic heritage has mainly social function, protecting these biological richness which could be contrary or misplaced of social intents.

The Brazilian society, reserving an especial chapter for the environment at the 1988's Federation Constitution 'bring consciousness that qualities of environment will became a good, or a patrimony, a really value, whose preservation, recovering, and revitalization will be taking as imperative of Federal Government from Brazil which assure the health, the human well-being, and the conditions of their development.

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In fact, to assure the fundamental right of life' (our translation) (ROCHA, 2007).

This part of Constitution of Federative Republic of Brazil, in the 225 clause, determines Federal Government and Brazilian society rights of environmental integrity and biological preservation as national values. Besides, Law on Biodiversity marks the common safeguard and major protection of biodiversity, prevented of conflicting ways whose can exist between the monopoly of biological resources and the social intents, such as the individual health and the environmental safety.

In past decades, biological reserves have partitioned from public areas of environmental protection. According to genetic heritage, more than the services of climate regulation and environmental safety, Brazilian biodiversity contains multiple challenges of conservation and interests of ecological maintenance; moreover, it's notorious for environmental and global supports.

Historically, part of biological reserves can be ground by *wilderness* concept. To the integrity of nature, American initiatives and conceptual reasons about natural philosophy have projected reminiscents of nature and remaining sites. Therefore, with a clearly thought of early nature or ancient quality, American planning and community empowerment from United States present significant changes over the years, since the origin of *wilderness* and, always enabled professionally in Landscape Architecture.

MATERIAL AND METHODS

Landscape Architecture

In the book *Wilderness by Design: Landscape Architecture and The National Park Service*, Ethan Carr (1998) through Landscape History and Forest Protection describes that interwar period – end of First Global War until United States entry of Second Global War – became a time of environmental engagement from U.S. Federal Government to start the Park System planning.

Carr (1998) declares *wilderness* for a key concept that coursed over the 19th American century. The author denotes an explicit understanding of nature which assigns environmental values as a place, about where could be meaning of ancient site or early condition. More than a mobility plan, *wilderness* deployed social factors and architectural aspects, a sense of individual attraction as much as accessible of modern equipment and functional structure which agreed to urban issues.

Engineers and professionals in Landscape Architecture planned circulation spaces, roads, camping areas, villages, administrative headquarters, also facilities that could be swung against a tide of intense environmental degradation and alteration on earth. The central planning purposed services at national parks with characteristics of natural consistency, solidity and integrity of nature. Through spatial benefits and site degrees assembled, visitors should reacquire a contact with nature, such as a safari park or a wild experience.

For most visitors, even today, the emotional enjoyment achieved through the appreciation of landscape beauty is not an inevitable, accidental, or haphazard affair. The designed landscapes within the park choreograph visitors' movements and define the pace and sequence of much of their experience. The designed landscapes mediate between the individual and the terrain of the backcountry. Wilderness and designed landscape together generate the aesthetic appreciation of landscapes and the emotional communion with the natural world which, at least historically, the word 'park' implied (CARR, 1998).

Then, *wilderness* concept has assimilated spatial characteristics, mobility circumstances and cultural aspects into a design thinking over the landscape and the nature, aggregated them for sites between early quality, primary condition and aspects of individual attraction. Therefore, places that not only attributed from art oeuvres and landscaping frameworks; because its combine of citizen options and individual safety by common meanings. Conjoining mobility planning to environmental conditions and natural contexts, those social and spatial qualities resulted from communal sensibilities; in fact, *wilderness* placed nature to a really empowerment.

Moreover, Landscape Architecture promoted developments of nature maintenance at park services, given professional alternatives and activities between the public structure and urban planning. Expanding to perspectives, more than an attractive place from the modern view, this professional field established an environmental profile to the architecture project, appreciated in constructive directions and environmental expressions which also contains similarities to rural territories. Possibly to think architecturally, an overview of nature and a knowledge of landscape, where natural benefits were provided by the public necessities and the urban activities, and encouraged people for a common contact into the "wilderness".

Carr (1998) contextualizes the National Conference on States Parks and Stephen Mather. In 1921, the political engagement and the public encouragement were invested at national parks, considered by the urgent implementation of a natural system over the country. In 1930's ending, these opportunities resulted in a weak American economic plan and, after 1933, the Park Service program was initiated under Franklin Delano Roosevelt president. More than strategical position, national parks have developed local measures of environmental services and technical advances, supported through the actual necessity of works and instruments in nature maintenance.

New kinds of parks, like recreational demonstration areas, the national recreation area, and the national seashore were planned in the 1930s, often on land acquired in connection with other activities, such as soil conservation or dam construction. (…) They are examples of outstanding historical significance and possess exceptional physical integrity. (…) Subsequent maintenance and reconstruction in many cases have not significantly altered the experience of landscape scenery that park planners hoped and planned for over sixty years ago.(…) As noted above, landscape architecture does not immediately come to mind when considering national parks; national parks are, after all, great wilderness preserves, valued primarily for their primeval qualities (CARR, 1998).

From that moment, professionals in Landscape Architecture purchased new positions at Park Services which restructured for more site dimensions, types and varieties. Diversifying the original plan based under the national and public recreational areas from U.S. government, had orderly delimited dozens of historic sites, civil war camps and national monuments, expanding the condition of ancient and early nature that was a central ground by the *wilderness* concept.

Wilderness or the wild site

In the book *The Meaning of Wilderness: Essential Articles and Speeches* (1973), Sigurd F. Olson brings forward reflections about the necessities of *wilderness* and whose conditions its contains. Agronomist, lived between 1899 and 1982, was considered an important scholar and writer

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of natural philosophy for his own expression substantiated in nature. Over the 1960 and 1970's decades, Olson was an exponent of environmentalism and nature preservation by the wilderness' movement, and counselor with environmental leaders and public managers at U.S. National Park Service.

In the first chapter "Reflections of a Guide", Olson refused the role-play of guide and the practice of actualization of human necessities to the peacefulness of a natural park. The guide would be the man of modernity, consciousness of values and capacities to judge the landscape as natural place of the wilderness, providing crucially preservation of this remaining nature. Then, Olson described the guide escorted the urban visitors round on that site and, near to a wild domesticated landscape, they cross a river where fishermen living nearby.

This type is perhaps the hardest problem for the guide. When the fish are not striking, the cruise is a failure; and when they are, it soon becomes monotonous. After about three days of wonderful fishing, the excitement of pulling out more fish than the camp has any use for palls, and discontentment prevails. In vain are the beauties of the scenery extolled, but nothing can satisfy. The fishing for fishing's sake alone soon becomes mechanical; and no matter how ideal other conditions may be, the fisherman leaves dissatisfied (OLSON, 1973).

Olson (1973) referred the guide as a "bridge" between the urban visitors, the fisherman and the wilderness. Into a thought of exaltation, a view of rural activity was provided where a cultural quality was sited on an ancient place. In fact, the integrity of the site can be similar to a fishing area or a farmland. In spite of fixing the landscape into an early condition that sustains and holds itself; a social activity was presented in Olson (1973) between places of remote and culture. However, this emotional sense differs to a long distance athlete on the same site: by the author, the ideal pause would be for his physical rest.

Concerning to Olson, no matter how necessary the national parks management becomes, the earliest nature of *wilderness* orientates an intangible value while a meaning. Moreover, an understanding of nature distanted of urban realities. In fact, this remaining framework has not only allowable architectural elaborations, but also to selected and to specified places of external projects. Assembling nature with common necessities and communal senses, that constructed project of natural sites lined by individual features and spatial benefits.

According to the influences of strongholds of biodiversity, an environmental outline or a remote place was fixed with early qualities and defined the biological reserves to a sense of abundance. However, spatial forms and individual activities that are non accompanied of urban processes. Seen similarly to rural territories, the wilderness' scenario carries out perspectives of nature through backcountry places and environmental heritages; whereas, the national parks promoted, or namely UCs and biological reserves of Law on Biodiversity from Brazil, a holding way against the uses of nature by modern and urban life. Likewise, *wilderness* concept describes cultural practices that fixed the nature into a remote place, and possibly to investigate over pleasuring eyes and updating by visitors.

Seen through the eyes of people who know these things and understand the intangible values of atmosphere, improvement for entirely practical reasons is unwarranted (OLSON, 1973).

So, what sustains the wilderness? Seen as an exploratory way in Olson (1973), national parks offer benefits by institutional dimensions and spatial aspects of nature

which assembled environmental services and biological resources through a common sense of safety. Therefore, there is a pragmatic view which invites natural and environmental scientists, because it arranges environmental benefits and natural conditions, and can be explained on the architecture project; in fact, measure meanings of nature with spatial frameworks and living elaborations. In other words, the natural site expanded to regional characteristics and environmental conditions, also social activities properly for mobility studies and urban planning.

RESULTS AND DISCUSSION

The geoecological profile from Brazil

Whatever which be valued as an attribute of landscape, the term involves intensively sense from the viewer. Proposing to delimitation, this recognized portion conjugates locally physical, historical and social forms, as well cultural arrangements and economic establishments as the environmental conditions of geopolitical perspective and territorial management.

According to Manosso (2013), to utilize landscape as category of analysis of earth surface, interpretations will be relevant from different combinations. For example, between atmospheric agents and anthropic effects, biological resources and structures of lithosphere, or ecological interactions. By Manosso (2013), the landscape physically expressed of unities and compartments which cross natural processes and several forms on interdependence. In other words, the geoecological profile represents an integrated view of dynamics and forms over the landscape, with temporal and physical extensions delimited by intensities and conditions.

Physical characteristics are divided into those transverse patterns of profile, such as the climate and the rock types, the soils and spatial distribution, the geomorphic structure, water profile, and the biocenosis. The last potentially impacted through geographical interactions and environmental conditions with the biogeochemical structure and the organism occurrences across the landscape, as well ecological interactions as a dynamical relationship resulted from natural and socioeconomic activities, also their cyclical structures combined.

On the same manner, but in a distinct temporal scale, the human societies, organizing themselves over the earth surface, have go to interacts with the physical structure. But, what is recognized, spatially, this interaction contains several intensities and forms; because the human society has enough and heterogeneous subjection about the physical environment. (…) That´s why a current profile of landscape express much spatial conditions on the present geoecological structure, and the socioeconomic systems actives; but they can reflect in meanings, goals and, preterit actions, whose orders would be from physical nature or socioeconomic (our translation) (MANOSSO, 2013).

Manosso (2013) attaches unities and compartments of landscape at geoecological profile. The socioeconomic and natural active formations are territoriality obtained between two dynamical orders, defined by facies and horizons, those surveys that examine the landscape in physical variation. Through this interdisciplinary methodology, socio-economic and natural co-expression of forms and conditions could present difficulty of outcomes when being discussed about socio-environmental systems. In other words, each one integrates contexts that formally complement levels, orders and forms of land production and landscape employment. In

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fact, they technically promote local interactions with plant production and ecosystem services.

In view of geoecological representation, the socioeconomic and the natural co-production reflects into a complex of environmental activities and ecological processes. Alternatively, those systems have active results of contributions from environmental services and soil conservation. By choices on plant production integrated to landscape qualities, different modes of organization promoted ecological practices and economic activities, also the local sustenance and regional resilience. For example, Brazilian productions have chosen plants to restore and to replace the landscape productively.

Bertrand (1968) to define the global physical geography considers the landscape as a global entity. The constituting elements participate into a common dynamic that not obligatorily corresponds from the evolution of each one seen apart. Therefore, a landscape where should be producing as spatial inhabited if, on the geoecological profile, the representation can be another territory in the future. Hence, common elements of the landscape will orientate intensities which have not resembled to the first profile whereas, the local organizations and the environmental production would not be defining a complex of contributions between physical, biological and socioeconomic adaptations.

The integrated analysis of the landscape, therefore, aims to interpret the processes that shape the surface and lead a particular landscape to be what it is today and how the dynamics of the geoecological structure interfered with the socioeconomic dynamics, and vice versa (our translation) (MANOSSO, 2013).

The geoecological profile has interdisciplinary approach, previously to Berouchachvili & Bertrand (1978) and Berouchachvili & Radvanyi (1978), that discussed the landscape from variations of physical and natural structures. Analyzing to a transverse profile of vertical and horizontal condition, and presenting to regions of state of Paraná from Brazil was obtained different unities and physical compartments to landscape (MANOSSO & NÓBREGA, 2008; MANOSSO, 2009; MANOSSO, 2013). Along with transects, the profiles adopted the physical and the regional structure, as much the climate, the relief, the topography, the hydrography, the soils, and the lithography combined which can integrated to regional characteristics and socioeconomic formations, transforming on strengths and limitations (MANOSSO, 2013).

According to Manosso (2013), if that methodology is a geoecological cartography, the representation affects to elements and phenomenons of landscape and, it been a geoecological structure illustrates variations of landscape structures; as well as, to facilitate the interpretation under an integrative view between those considered elements of the profile. Besides, Bertrand (1968) defined Geosystem to certain spatial type of biological exploitation which could possibly distinguish exploitation, potential and employment of biological resources in a range of historical time.

Briefly, geoecological profile integrates spatial and temporal extensions, which one is horizontal and other vertical, basing both of dynamical compartments or integrated units from Paraná's surveys:

> **The geofacies:** are horizontal organizations of the landscape and under the surface that have analyzed by Global Information System (GIS). These surveys infers anthropic processes and current activities which can divide for subunits with structure, condition, and own compartments, not only homogeneous.

I.e., geomorphic forms, land uses, fragments of forest, climates, productions of each land use, soil productivity, regional and socioeconomic values, population etc;

The geohorizons: have considered the vertical disposition of physical and natural forms and processes which cross the landscape. These dynamical surveys contain levels, composition and degrees over earth surface, for example, according to dynamics of energy and mass, geomorphic evolution, balances of biomass and geochemistry from atmosphere to lithosphere.

In this context, it´s evident, the different forms of relief, associated to this lithology, structure and composition of land cover, more the climate influencing modes of interactions between nature and society. And, meaning of an area more extensive, this survey of territory roofs several colonization and culture processes whose complement and enrich different processes of appropriation, exploitation, and interaction with the environment, setting a specific socio-spatial formation (our translation) (MANOSSO, 2013).

Thus, the spatial inhabited that origins from specific socio-spatial formation if, argued landscape to a complex with modes of interactions and environmental productions over the landscape, local contributions and socio-environmental activities contained landscape practices with physical and social formations. Likewise, a certain system of ecological and economic productions by socio-spatial influences. In addition, the geosystem has a certain type of land complex; then, even in a short space-time, for example, a historical type, the biological potential and the employment of biological resources are unstable datasets which varies either in time and space (BERTRAND, 1968).

Seeing previously, rural activities present similarities to remaining nature. Alternatively, the geoecological profile specifies the landscape between socio-spatial formations and modes of interactions. In the same way, a complex of geosystem has contained specific employments of biological resources which can express as compartments. Manosso (2013) cites three Brazilian authors what assigns the understanding of environment, landscape and geography heritages as an integrated condition.

Santos (2002)[1] to reflect about the space, concluded the landscape is a set of forms that, at a given moment, constantly expressed heritages of society and environment. (…) And Troppmair and Galina (2006) suggest that in spite of work with the infinite distinction between Landscape and Geossystem that can be adopted the term of 'geodiversity' in the matter of oppose the biodiversity utilized by biologists, and find an understanding of the relationship nature-human and not necessarily from human-nature (our translation) (MANOSSO, 2013).

Troppmair and Galina (2006) bring forward the geosystem as dynamic of temporal extension. The time, usually noted to measure a period, becomes to a process. Further, Manosso (2013) explains the production of space which is organized as ecological and cultural complex. Therefore, between availability and exploitation of biological resources, the geodiversity can intervene in two environmental matters: the intensive matter, the human choices and their historical production, and the extensive matter, inserted by ecological and environmental intensities.

After all, socio-environmental systems already present modes of production of landscape, as well as agents of climate regulation services, local knowledge of ecological restoration and, notorious activities of soil conservation

1 SANTOS, M. 2021. The Nature of Space. **Duke University Press**. 304p.

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and biodiversity. Just as plants and animals develop their biological cycle, the man also carries out his activities in the Geosystem, modifying occupation, structure, dynamics and interrelations (TROPPMAIR & GALINA, 2006).

According to Manosso (2013), socio-spatial formations express unities of complementary surfaces. Similarly, the geocological profile contains elements of common compartments and scale of intensities which could specify geoecological activities. In other words, a complex of society and local heritages that assures the geodiversity of landscapes; then, employments of biological resources, environmental services, and conservation of biodiversity from Brazil.

Macro-outline: The biocenosis of soil

The agronomists Ana Primavesi and Artur Primavesi, authors of the book *Biocenosis of Soil in the plant production & Mineral deficiencies in plant growth* (2018) employ a concept to soil of biocenosis when the soil can be not seen as a static factor, but it's a really dynamic body. This definition is allowed due to the soil is able of permanent changes and capable for reshapes and reforms through the soil managements. The living soil presents natural permeability and the edaphic environment is constantly open and liable to acclimatizations.

In a nutshell, the soil is a dynamical system and has three-dimensional form. According to the classical pedology, the major factors of formation and genesis are present between the parent material, the relief, the organisms, and the time. Beyond that structure of three-phases (on solid phase – mineral, on liquid phase – water and, on gas phase – air) which grants life to soil coursed on the biological phase. This fourth phase is a living locus to fauna and flora processes in micro and macrodimensions with multiple biological interactions that shaped, reshaped and, reformed the soil. On the book and others, Primavesi's presented experimental managements and soil experiences as an overview of agroecological contexts and agroecology studies.

Discussed previously, the biocenosis of soil has scientifically approached to a unit of living laces with gradual physical-chemistry enrichments, also local co-dependencies by choices of plant production and biological establishments; then, there is a co-arrangement associated between human influences and soil maintenance techniques, become decisively from both and others organisms onto that edaphic environment.

As center of considerations, find the solo as dynamic organism, which biodynamic factors influence mutually and, therefore, can conserve and increase the soil fertility, as well as block or decrease it (our translation) (SCHEFFER, 1964 apud PRIMAVESI & PRIMAVESI, 2018, p. 27).

In addition to the edaphic environment, a biological potential of the living soil considers the agricultural responsibilities of physical and chemical solo conditions as a mutual influence, the soil vitality has nurtured to a living support from both and between several living beings. Moreover, between the organic and inorganic influence, the enrichment of soil practices and the agroecological system increase degrees of living soil which have resulted from different choices of soil-plant productions. Then, placed with agrarian contexts and agricultural experiences, those living soil practices not only have influence on the processes of biodynamic, the agricultural knowledge, and the soil-plant diversity also present the interdependence of soil and ecosystem. As a consequence, the management of living soil

contains social and cultural arrangements by own ecological choices and productive bases, providing them for maintenance and sustenance of landscape while resilience.

Under "Historic" chapter (PRIMAVESI & PRIMAVESI, 2018, p.33), biocenosis of soil contains the reciprocal factors of soil-plant-microlife. The authors recognized many techniques by experimental definitions and practical meanings of agroecology as important subject. From the microorganism enrichment and the living soil, the active and biological environment conjoins co-generation processes of the current state of agricultural system and their profile of production. The authors explained the processes of biodynamic through three fields of study in Agrarian Sciences: I) Soil microbiology; II) Soil biology and; III) Plant sociology.

The chapter *The Plant Sociology* (PRIMAVESI & PRIMAVESI, 2018, p. 42) recognizes Egyptian and Greek ancient societies, where the soil influenced the plants and the plants to the soil. Gathered not only in Plant Ecology, mutual benefits associated between the plant community and the plant population expressed into the soil as environmental condition by selection of plants.

The competition for space, water, nutrients and sunlight is so much tight as more similar are the plants exigences (PRIMAVESI & PRIMAVESI, 2018). Changing the plant community, can be assure that the soil is changing too, as well as potential mechanism of compensation that could be go onto decline. For example, a forest or a pasture non managed, this land choice constitutes a bound of society and communities of plants by crop and non-crop species at the soil.

This relationship of the living soil, plant selection and land choices has found specific socio-spatial formations in the Brazilian tropical agriculture, because agroecological changes in the agroecological systems have promoted the soil conservation, the environmental services, and plants establishments. Likewise, one choice of soil management, such as the selective choice of non-crop and crop plants, can express these land arrangements through the soil acclimatization and the agroecological diversity. Then, from agroecology and soil maintenances, it's possible to verify which processes of biodynamic have issues solved with agricultural practices and plant selection; moreover, these could be arguing to geodiversities through the biocenosis of soil from Brazil.

The plant ecology is today as much developed science and it knows perfectly, the interdependence existing between the vegetation and the environment ('Standort'). In our agricultural crops, the dependence of climate is, though, less than the own soil. We find over a climate, innumerable phyto societies [2], depending all, to conditions favored by soil. From the agronomist not interests much the phyto society, but yet, the agricultural. (…) It's, so more economic to plant the crop more adapted to the environment then plants which, in the moment, their promise better, but its fail after or supply an unsatisfactory income been the environment inappropriate for the crop (our translation) (PRIMAVESI & PRIMAVESI, 2018, p. 45-46).

That economical practice of agroecology has science through plant growth experiences and the agricultural choices, also both are described widely to environmental enrichments and soil acclimatizations; however, there is not fixed historical time of soil practices and plant interactions that can be explained in geoecological levels. Besides, most of the agroecological systems not only have defined as ecological influences, because its involve

2 The term phyto society is actually not able to plants. Thus, the term more appropriate and usual are community of plants or population of plants.

productively more agricultural changes of management experiences and obtained through the own plant production and the biodynamic qualities of each soil improved. Further a way of agroecological diversity, the local and the soil proceedings intend to assure the resilience of agricultural development, production, and the environmental sustenance while conservation of soil production, both as directions of agricultural arrangements and environmental conditions.

For example, the introduction of plants adaptable to this community of plants already present can improve the potential of interaction of these plants and with it the soil (PRIMAVESI & PRIMAVESI, 2018). Techniques of soil-plant choices, such as community of plants contains strategical management and environmental circumstances that proposing other opportunities at plant production in Agricultural Sciences. For example, to farmers or restoration ecologists, they can choose to maintain or include more plants of biological potential. Through the crop rotation and selection of the plant community, this active process of biodynamic enriches the living soil; more than the less competition of environmental resources, also to improve arrangements of productional choices and agroecological supports; whose could be expressed on environmental intensities and soil vitaly. Thus, an economical contribution of agroecological successions.

According to Troppmair and Galina (2006), the geosystem is a complex unit, a wide space what characterizes a certain homogeneity of their components, structures, fluxes and relationships that have been integrated to the forms of physical environment where had biological exploitation. Directly, generated the interrelations of biosphere, shaping on the landscape.

Discussing to the interdependence of vegetation, agricultural plants, living soil, and the microclimate by Primavesi's, those relationships of biodiversity and community of plants can be a geographical aspect. Both a mutual condition under the landscape with different levels, factors and forms from gradual regional and agrarian scale, choices of plant community and living soil have determinant thought of ecological management. In other words, the biocenosis of soil can express a notable survey between the chemical and the physical environment of soil potential over the biological exploitation. For example, an agricultural selection and a crop choice, the co-production plant of water-soil retention and microclimate-climate regulation; this agricultural practice approaching co-dependences of geodiversity, environmental influences and socio-spatial heritages.

In other words, associations of the crop and the non-crop plants commonly managed as companion plants have reduced deleterious impacts on soil, plant production and landscape. So, the biological exploitation ensures soil influences which environmental intensities emerging by the biological potential. One plant selected to microclimate regulation and water-soil retention presents this co-dependence of environmental factors and biological services without error of unity. In other words, elements of landscape constituted in climate regulation and agricultural scale, as well the environmental services as an active profile of geosystem.

For example, choices of forest species with crop root-tubercle species favor the soil production, the microclimate regulation, and the physical water content of living soil, also their environmental resources. These plants promote more water storage and air circulation into the soil and, as a consequence, from the landscape; thus, an agricultural benefit for the landscape employment provided from regional scale. Certainly, these operations of soil management, for example, the

selection of plant population by mechanical and removal plant techniques inhibits the competition of plant communities and soil production resources already present; in the same matter, the biological potential was enriched and reacquired to the soil. Possibly to integrate the crop, the non-crop plants and the forest species through different patterns of growth compensates other geoecological intensity. Properly, ecological succession emerges under the landscape which can be an exploratory way to specify processes of biocenosis.

Reaffirming to Landscape Architecture, the living soil presents a continuity between environmental services, local experiences and soil managements. Conjoining as a socio-spatial arrangement, agroecological systems possibly contain criterias to distinguish the environmental intensities and, a profile of agricultural knowledge and experiences of plant production by the soil conservation and the landscape. Regarding to geoecological profile, an interdependence activity of soil-plant choices expressed agricultural intensities and practices of nature and society, also the development of agrobiodiversity production in scale.

Seen as one of reciprocal and cyclical soil practices from Primavesi's (2018), the living soil capacity provided these contiguity relationships of community of plants and plant production. Such as the companion plants, technically one living enrichment of soil vitality, converges the biocenosis of soil as a pillar of the landscape and environmental services. Moreover, common elements which sustained this Brazilian macro-outline, due to the living soil mobilized local geodiversity while a socio-spatial influence; thus, it drives in a profile of geosystem.

CONCLUSIONS

Crossing Agricultural Sciences and Geography

Now and previously decades, the biological reserves and Conservation Units (UCs) from Brazil are delimited for public areas of environmental protection, and partitioned to biological heritages and environmental safety. Conceptually to spatial and cultural parameters, Brazilian biological reserves correspond also to a common sense of safeguard.

Crossing to this Brazilian macro-outline, the study had opportunities to explore ways and meanings of *biocenosis of soil* in Agricultural Sciences, also to understand them in Primavesi and Primavesi (2018) by the reciprocity and cyclic condition of living soils. Historically to Landscape Architecture in Carr (1998) e Olson (1973), planning sites of individual benefits and communal sense invested from *wilderness* in consciousness value of nature. American initiatives considered environmental values to urban realities and the intense degradation of nature was addressed at national parks. Issues on the architecture project, urban and mobility planning purchased public areas that locally sustained developments of nature maintenance. In fact, *wilderness* constructed "bridges" between nature maintenance, environmentalism, and patrimony.

However, reporting to the analysis of Biodiversity Law (ROCHA, 20007), an evident precaution about what drives genetic engineering and patent generations could be resulting on ways of disagreement has also concerned to Brazilian environmental policy. Then, biological reserves present social, environmental and economical risks, focusing on the paradigm of impartial use and sustainable usage as developing sources.

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Through the soil conservation, the forest, river basin and degraded land restoration, co-arrangements of Brazilian production by agroecology techniques and socio-environmental systems, technique can be measure in geodiversity scale, due to promote specific conditions of biodiversity employment and biological potential. In fact, they have demonstrated modes of socio-spatial influences and economical activities.

Currently, Brazilian environmental projects are regulated to restoration, compensation, and regularization of rural properties, also there is a public lack of guidelines and policies that emphasized the social employees, environmental services and regional arrangements. More than projects of environmental recovery and ecosystem restoration, the lack of economic inputs are related into the governance and the compliance of technologies and developing operations; including to supply chains with more and continuous legal effectiveness.

Consolidated to Brazilian experiences, the System Theory provides understanding of the loss and compensation to ecosystems by ecological interactions and degrees over the landscape; both already considered for environmental governance and Brazilian initiatives on levels of ecological resilience. Also, in Ecosystem Ecology, and similarly in Manosso (2009; 2013) to g*eoecological profile*, and in Primavesi and Primavesi (2008) to *biocenosis of soil*.

However, the interdependence promoted with practices of agroecology and conditions of geodiversity demonstrates expressions of vegetation-soil-environment. Through the living soil, agroecological experiences, agricultural arrangements and soil managements contain "bridges" between the biological resources and the conservation of soil and biodiversity to a common environmental safety. It would be, in general, expanding scale of environmental services and soil vitality from Brazil.

Returning to Olson (1973), the national parks effected a natural system from U.S. and, comparing to experiences of rural activities and soil practices in Agroecology, new social and plant production scales could delimiting aspects of landscape employment, occupying the lack of nature maintenance for the layers of nature preservation and conservation of biodiversity from Brazil.

Agroecological operations interact with the living soil, the local and open knowledge developed by agroecological experiences and Brazilian soils. Approaching to the geoecological profile, mainly a formation of landscape while an agricultural territory, where a rural space organizes with technical, economic and social systems; also, their interfaces between abiotic, biotic and socio-economic systems (MANOSSO, 2013).

Demonstrating to widespread literature of Primavesi's, the intensive agriculture starts when each action of soil management or, agricultural treatment, exists under responsibility to all chemical, physical and biological processes of the biocenosis of soil, provided into a biodynamic.

The Primavesi's utilize the "reciprocal-cyclic" term when compared to another literature. At first, the task sounds redundant; however, it agglutinates spatial and temporal interactions that favors the soil living. The reciprocal presents the agroecological system and their production, this plant replacement over the specific matters to the soil by plant management. And, the cyclic demonstrated the spatial and temporal unity of energy and mass exchange into the soil living where it occurs through agroecological practices. Thus, either a healthy growth of crop and non-crop plants and, such as the technique of companion plants, justify a reciprocal-cyclic

choice.

To Landscape Architecture, the "brigde", for example, between plant experiences and managements of living soil expressed a specific socio-spatial formation while a biodynamic. Each one, such as the geodiversity, started with social, economic, and productive choices to dialog to a dynamic system of environmental safety, biological employment and biodiversity potential. In fact, they can be economically mobilizing scales of arrangement with Brazilian agrobiodiversity, the climate services and environmental resources. In other words, because if there is not soil without living embodied, there would be not landscapes without soil and living practices incorporated.

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