INTEGRATING UNIVERSITY EXTENSION INTO TEACHING AND RESEARCH IN ADMINISTRATION: SYSTEMATIZATION OF EXPERIENCE WITH INDIGENOUS PEOPLE IN THE LIGHT OF THE SUSTAINABLE DEVELOPMENT GOALS

INTEGRANDO A EXTENSÃO UNIVERSITÁRIA AO ENSINO E À PESQUISA EM ADMINISTRAÇÃO: SISTEMATIZAÇÃO DE EXPERIÊNCIA JUNTO A INDÍGENAS À LUZ DOS OBJETIVOS DO DESENVOLVIMENTO SUSTENTÁVEL

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### ABSTRACT

This study addresses the challenges of integrating research and teaching into university extension program as an important strategy to materialize the quality of academic training in Administration towards the sustainable development goals (SDG). The action, object of study, is developed by the Department of Administrative Sciences and Department of Public Administration and Social Management of UFRN in collaboration with other departments and campuses at the same institution. The action was developed in the "Mendonca do Amarelão" indigenous community, in the municipality of João Câmara / RN. The objective of this study was to understand how problem situations are formulated for a university-society partnership in search of sustainable development through research projects, and how these actions feed back into the education system. The research was carried out through action research (THIOLLENT, 2003) and a qualitative approach in data analysis. The systematization of common problems and needs (community-university) has led to a central theme under which action has been taken: the management of short production circuits, with emphasis on achieving food and nutritional sovereignty and security, promoting sustainable agriculture and ensuring sustainable production and consumption patterns. It was noticed that the community is oriented to the valuation, recognition and preservation of local resources, important to the accomplishment of the SDG. In this sense, in addition to the very condition of indigenous peoples, such as the one related to territory, there are local obstacles related to production capacity management and production organization, as well as bureaucratic, commercial and gender issues that impact on their food security and sovereignty. This requires an interdisciplinary debate with several fields of knowledge and teachers involved in the current needs of society and issues requiring further research, in order to be included in the educational system to promote technical-scientific and cultural development and citizen training of UFRN graduates. The university extension program is highlighted as an integrating link between research and teaching and enables the construction of a unified interdisciplinary proposal that recognizes education as an emancipatory and continuous human practice.

**Keywords**: community-institutional relations, sustainable development, teaching and research in Administration, family agriculture, indigenous population.

#### RESUMO

Este estudo aborda os desafios da integração da pesquisa e ensino, a partir da extensão universitária, como uma estratégia importante para materializar a qualidade da formação acadêmica em Administração em direção aos objetivos do desenvolvimento sustentável (ODS). A ação de extensão, objeto de estudo, é desenvolvida pelo Departamento de Ciências Administrativas e Departamento de Administração Pública e Gestão Social da UFRN em colaboração com outros departamentos e campi da mesma instituição. O desenvolvimento da ação se deu na Associação da comunidade indígena dos Mendonça do Amarelão, no município de João Câmara/RN. Objetivou-se, a partir da ação de extensão desenvolvida, compreender como as situações-problemas são formuladas para parceria universidade-sociedade em busca do desenvolvimento sustentável via projetos de pesquisa, e como essas ações retroalimentam o sistema de ensino. A investigação ocorreu por meio da pesquisa-ação (THIOLLENT, 2003) e abordagem qualitativa na análise dos dados. A sistematização dos problemas e necessidades comuns (comunidade-universidade) levou a um tema central sob o qual foi construída a ação: a gestão de circuitos curtos de produção, com ênfase a alcançar a soberania e segurança alimentar e nutricional, promover a agricultura sustentável e assegurar padrões de produção e de consumo sustentáveis. Percebeu-se que a comunidade é orientada para a valorização, reconhecimento e preservação dos recursos locais, importante à efetivação dos ODS. Neste sentido, além da própria condição dos povos indígenas, como aquelas relacionadas ao território, há entraves locais relacionados à gestão da capacidade produtiva e organização da produção, burocráticos, comerciais e de gênero, que impactam na sua segurança e soberania alimentar e exigiram debate interdisciplinar, com vários campos do saber, e docentes envolvidos com as necessidades atuais da sociedade para alinhá-las ao ambiente de ensino e com questões de investigação na proposição de encaminhamentos necessárias ao desenvolvimento técnico-científico e cultural e à formação cidadã do graduando da UFRN, destacando a atividade de extensão como elo integrador entre a pesquisa e o ensino, e possibilitando a construção de uma proposta interdisciplinar unificada que reconhece a educação como uma prática emancipatória e contínua do ser humano.

**Palavras-chaves:** extensão universitária, desenvolvimento sustentável, ensino e pesquisa em Administração, agricultura familiar, povos indígenas.

## **INTRODUTION**

Education in Administration in Brazil is strongly grounded on the management model developed in the United States, which is guided by the utilitarian concept of results, strengthening the mechanical-instrumental logic and placing training emphasis on organizations of the private sector (ZAGO, SOUZA; BEZERRA, 2007; SILVA; SILVA; FREITAS, 2013). For this reason, Aktouf (2005) denounces the predominance of mathematical and technical contents in Administration courses in detriment to cultural and humanist contents, which also permeate the organizations' reality. From this perspective, teaching, research and extension in the field of Administration/Management tend to underline private corporations, trade organizations and competitiveness or, from other perspective - Public Administration - the set of public companies or governmental organizations. Both approaches thus exclude a broad range of nongovernmental, nonprofit, solidary, communitarian and traditional public organizations, oriented to collectivistic interests and production logic not necessarily market-oriented. Thus, the aim of the present study is to explore and discuss an extensionist practice linked to teaching and research activities.

The world context faces the most diverse challenges, with severe, real, economic, social and environmental problems, which urge society to seek solutions to minimize or mitigate their effects, requiring concerted efforts of both public and private agents. The Sustainable Development Goals (SDG) thus pursue the objective of setting global priorities and aspirations by 2030. Ending hunger, achieving food and nutritional security and promoting sustainable agriculture, ensuring sustainable production and consumption patterns, are among their goals. The United Nations (UN) points out that the SDG represent an opportunity to eliminate extreme poverty in all their forms and dimensions and place the world on a pathway toward sustainable development (BRASIL, 2015).

In order that organizations incorporate the perspectives that the SDG represent is challenging and, at the same time, an opportunity to leverage managerial and entrepreneurial innovations such as initiatives related to

sustainable, green procurement and marketing (AGYEPONG; NHAMO, 2017). However, to transform challenges into opportunities, it is necessary to understand the contemporary setting and the SDG implications for organizations, which requires an articulated action between governments, businesses and civil society. In this regard, the role played by universities in the construction of knowledge and graduation of professionals with technical skills and social and political values grounded on the commitment to future generations is of vital importance. From the academic point of view, such educational, generalist and integrated approach may arise from articulation between teaching, research and extension.

In the light of this reality, it is reiterated the importance of fostering social training of undergraduates as a social subject, leading to conscious, substantive and intentional action, in a reciprocal and contextualized way, so as to strengthen life experiences (MARTINS-SILVA, SILVA; SILVA JUNIOR, 2016). Silva, Silva & Freitas (2013, p.3) highlighted in a research and teaching meeting on Business Administration the need for a "critical reflection on knowledge in the domains of management in order to understand it as a social, political, economic and moral phenomenon." (Our translation). One of the issues most demanded by students of Administration is the disconnection between theory and practice, excess of formal lectures and poor development of skills and challenges that are required from management professionals (CEZARINO; CORRÊA, 2015).

So, contents reproduction situations hinder possible organizational changes and, therefore, social ones (AKTOUF, 2005). Boaventura et al. (2018) questions how the curricular framework of a course may affect the development of capabilities, whereas Freitas, Montezano & Odelius (2018) state that university extension programs are correlated with managerial competences in all their dimensions, broadening horizons.

The national debate on research and extension framework, part of the agenda of the Ministry of Education, has brought about changes in terms of extension structuring, conception, practices and guidelines in higher education as a contribution, notably with the purpose of providing integral education to students and a contextualized, critical and responINTEGRATING UNIVERSITY EXTENSION INTO TEACHING AND RESEARCH IN ADMINISTRATION: SYSTEMATIZATION OF EXPERIENCE WITH INDIGENOUS PEOPLE IN THE LIGHT OF THE SUSTAINABLE DEVELOPMENT GOALS

sible training. It is related with the "establishment of a constructive and transforming dialogue with other sectors of the Brazilian and international society, respecting and fostering interculturality."

"[...] promotion of initiatives that express social commitment of higher education institutions to all areas, especially communication, culture, human rights and justice, education, environment, health, technology and production, and labor, in agreement with policies associated with guidelines for environmental education, ethnic-racial education, human rights and indigenous education". (BRASIL, 2018 [our translation])

Extension can be understood as an ethical reflection and incentive to the performance of academic and technical community in coping with social demands currently included in the SDG. Training on Administration requires a focus on changes, enabling managers to integrate cultural characteristics, experiences, insights and intuition, different disciplines and knowledges, thus extrapolating general Administration and including other areas of knowledge aiming to integrate skills, scenarios and contexts (AKTOUF, 2005, SOUZA; DIAS, 2006). With efforts toward this end, the Administration course at the Federal University of Rio Grande do Norte seeks to achieve such articulation through the intersection of extension in research and teaching practices. One of the actions takes place in the context of overcoming vulnerabilities, with a focus on one of the indigenous peoples by means of research-action procedures.

Research-action, as outlined here, comprises concerted efforts of students and teachers, both from Administration and other courses with which it was possible to establish relations of interest with solidarity work and agricultural/livestock production. Hence, in addition to Administration, an academic team was formed with students and teachers from the areas of Agronomy, Animal Science, Nutrition, Design and Architecture. University extension programs, therefore, undertaken by individuals of diverse fields of knowledge, have become an opportunity for integrated practice in the scope of SDGs – as detailed later in this text. The research-action intitled "Agri-food systems and rural women: short circuits of marketing

in the community of traditional (indigenous) peoples in Rio Grande do Norte" thus provides diagnoses and practical solutions for problem-situations that indigenous communities face in the light of SDG.

In this regard, the present study points up participatory research as an academic means to foster the autonomy of individuals in situation of vulnerability. The university-society relation – it is opportune to assume – inspires possibilities for the 2030 Agenda through practical actions in the SDG developed by multidisciplinary groups. This context brings to light an economic segment that most closely connects society to nature, the agri-food, and the need and interest of a population group on the use of ecologically-benign production methods (KOPNINA, 2017) to the environment and without damages to human health (MENGISTIE; MOL; OOST-ERVEER, 2017).

In behalf of positive financial outcomes, large agribusiness corporations impose increasing standardization of production and food consumption styles, progressively destroying the sovereignty of peoples and local communities over their livelihoods and lifestyles (GUPTA; HAIDER; ÖS-TERBLOM, 2019; PETERSEN; ARBENZ, 2018). Measures to cope with the social vulnerability of indigenous people, for instance, can be grounded on the following Sustainable Development Goals: SDG 2 - Zero Hunger, SDG 10 - Reduced inequalities, SDG 12 - Sustainable consumption and production, SDG 11 - Sustainable cities and communities, and SDG 15 - Life on land. The Food and Agriculture Organization (FAO) highlights the importance of indigenous people as strategic allies in the fight against food insecurity. This institution recognizes that their traditional diets and their sustainable production and management systems of natural resources are invaluable assets to achieve a world free from hunger (FAO, 2010). However, in a recent diagnosis, Calazans et al. (2017) identified a high rate of food insecurity among indigenous peoples in Rio Grande do Norte (RN), one of the approaches in this text.

According to the National Indian Foundation (FUNAI/RN), in Rio Grande do Norte state, there are eight regions that have been traditionally occupied by indigenous peoples for centuries, with more than 4,000

individuals, Potiguara being the most numerous ethnic group, among the 15 largest tribes still existing in Brazil (IBGE, 2012). Despite this fact, the Guide for Recording Indigenous Families (BRASIL, 2011) did not recognize this population, because they are not living in lands demarcated by the State as indigenous, which aggravates the situation of vulnerability. Paradoxally, food insecurity among these peoples is closely related with the territory, traditionally taken as the basis for the supply of quality food for family consumption and, when demanded, for income generation. Foods gain significance within what is considered as territory, defined as the physical, material and environmental support to the expression of collective identities aiming at the creation of sociocultural strategies (WEITZMAN, 2013, p.3).

Considering SDG from the perspective of indigenous population requires, according to Filac (2013), not only the definition of means to achieve these goals but the valuation and improvement of life conditions in the community context where they live. Thus, there is a need for a management process (collegiate, shared, collective) and a contextualized development, focused on specific competences of an association where the structure of power has a horizontal format, and the decision-making process, in turn, comprises dialogic pathways (TENÓRIO, 2005). The action considered here, in this scenario, aims to build an inventory of a problem situation in the scope of the SDG, based on integrated teaching research and extension actions from a multidisciplinary perspective. Development is here clearly viewed as a solidary, communitarian, endogenous, integrated approach, supported by an interdepartmental collaboration network and trust bonds. From the experience reported here derives a set of competences and skills around which teachers and students of Administration get together with peers from the most diverse domains of science to seek for innovative responses to the challenges faced by an indigenous community in the state of Rio Grande do Norte.

## THE ROLE OF SOCIAL MANAGEMENT AND IDEAL, SOLIDARY SUSTAINABLE DEVELOPMENT

Social management involves a broad set of organizations generically called third sector, an economic segment that is constituted of collective purposes and objectives, but unlike governmental organizations, they are of private nature (BRESSER-PEREIRA; GRAU, 1999). In the third sector are the socalled private organizations of public interest, nongovernmental public organizations. Also, according to Bresser-Pereira and Grau (1999), there are four relevant spheres or ownership forms in contemporary capitalism: a) state, public ownership; b) corporate; c) private; d) non-state public ownership. Public ownership comprises the set of organizations that hold the power of State and/or is subordinated to the State apparatus. Corporate ownership, in turn, is not for profits, but is oriented to defend interests of a group or corporation. Private ownership aims to profits and thus its interests are centered on capital accumulation. The non-state public segment, which is of interest here, is oriented to the public interests, and not for profits, although governed by the Private Law. Social management is interested on this segment, private organizations, but oriented to the public interest – non-state public ownership (SOUZA; OLIVEIRA, 2006).

In essence, social management involves decision-making processes of planning, organization, direction and control of organizations of two distinct segments: jobs and income generation under collective forms (production groups, associations, cooperatives, exchange clubs, community development banks, solidary finances, and others) and provision of social welfare services, commonly mentioned as nongovernmental organizations (NGO). Both have in common the fundamentals of the Private Law, as an association of people around common interests, thus having a clear public, collective, communitarian (non-state) character, but focused on purposes and following distinct pathways. While this segment has characteristics of care and welfare, requiring public and private funds to accomplish the missions of providing care and support to people (social work, healthcare, sports and entertainment) and preservation of heritage of public interest

(culture, environment), the other has economic purposes, and aims to, by means of self-managed processes, joint efforts and solidary work, collective well-being. As a horizon, work and income organizations are supported with their own resources, with the results of their members' work. The concept of Bresser-Pereira & Grau (1999) is then broadened.

Bresser-Pereira & Grau (1999, p. 17) argue that, "through the work of nongovernmental organizations engaged in providing social services such as schools, universities, research centers, hospitals, museums, symphony orchestras, an opportunity is opened for a shift in the State profile" (our translation). From a social-bureaucratic State that directly hires teachers, doctors, social workers, and other professionals to provide social and scientific services, as these authors claim, emerges a Social-Liberal State, which protects social rights by financing "non-state public organizations dedicated to protecting human rights or providing education, health, culture and social work services (...)" (our translation). According to the authors, it is a State that, besides being social and liberal, becomes more democratic because their activities are directly subject to social control. Social management, as it is currently addressed, is not exclusively oriented to this organizational framework and to the collaboration and cooperation prospects between the State and civil society and democratic exercise. Social management also has a focus on other organizations with centrality on job and income generation, in solidary work and with self-management vocation. Singer (2002) represents this segment, called solidary economy. Solidary economy is

"another mode of production, whose principles are collective or associated capital ownership and the right to individual freedom. The application of these principles unites all those that produce in a single class of workers, who hold equal number of shares in each cooperative or economic society. The natural outcome is solidarity and equality, whose reproduction, however, requires State mechanisms of solidary income redistribution." (SINGER, 2002, p. 10 [our translation]).

Social management, which derived from changes in the living conditions and movements and strategies of resistance of the working class

against the industrial capitalism in the nineteenth century, encompasses a broad set of organizations that today we call the third sector – either from a social welfare or self-management perspective. Currently, as in the past, work and production organization movements aiming to ensure equal rights, added by self-management principles, are clear, when "enterprises are managed collectively by the workers themselves, in an entirely democratic manner, each member having the right to one vote" (SINGER, 2002 – [our translation]). Thus, cooperatives and other form of collective work and production experiences, ruled by self-management, nonhierarchical management processes, is at the same time an exercise of citizenship and a strategy for social inclusion by creating jobs and generating income.

The third sector, as an object of social management, thus has the purpose of providing services and assistance of public interest (SOUZA; OLIVEIRA, 2006). Here are then grouped nongovernmental organizations (NGO), as they were called until recently, and now are officially denominated civil society organizations (CSO) under the Federal Law No 13.019 of July 31, 2014. In this sense, solidary economy comprises organizations that generate work and income opportunities and, therefore, use their resources for the benefit of their own members, and must be supported by their own financial results and sales and/or by the exchange of products and services they provide. On the other hand, CSOs with a social welfare approach do not have own revenues, and in this condition depend on donations from people, firms and governments. Although formally constituted - as civil society organizations, under the rules of the Private Law - their activities however are primarily supported by different sources: social welfare organizations raise public funds from governments, firms and individuals; socioeconomic organizations, under the solidary economy, seek to preserve their activities through the shareholders' work and production – hence, the basis of self-managed processes.

Both associative segments, generically linked together into the socalled third sector, have in common the purpose of fostering well-being in the light of humanitarian, solidary, sustainable principles and values. Together, social management scholars characterize it (MENON, 2016) using terms that describe the most diverse topics and segments such as culture, art, creativity and cultural policies; heritage, territory and communitarian experiences; gender and sexual diversity, and affirmative actions; rural education; cooperatives and solidary economy; social entrepreneurship; social technology; social responsibility, empowerment and citizenship; social movements. However, there is no distance between constructors of knowledge on social management when it comes to conceptualizing it, as can be seen below.

In conceptual terms, the social management researchers compiled by Menon (2016), define the construct, for instance, as a dialogical process in which the decision-making authority is shared by the participants of the action (TENÓRIO, 2005) and as a transforming mediation process that articulates multiple individual and societal scales of power, which reflects and creates cultural agendas and promotes collective actions and learnings (FISCHER, 2002). It is based on the purpose of promoting advances in management practices for the democratization of social relations by making bottom-up decisions (BOULLOSA; SHOMMER, 2008), becoming a space for performance of civil society, in which the economic dimension becomes a means (rather than an end) to achieve goals (FRANÇA-FIL-HO, 2008). It is then clear the understanding that social management involves civil society in participatory (dialogical) processes, by articulating and measuring different scales of power on the decision-making of actions with collectivistic purposes. With such a theoretical-empirical approach, social management assumes a character and commitments with sustainable dimensions, as Menon (2016) emphatically reports.

Social management, in Menon (2016), appears with other terms such as solidary relationship, solidary economy and gift, and solidary production networks or chains. It is also present in discourses with constructs such as environmental education, socio(environmental) management, socio-environmental responsibility, socio-environmental development, socio-environmental balance sheet and environmental governance. For this reason, the author concludes that social management is a multidisciplinary field that brings together researchers of the most distinct areas such as Adminis-

tration/Management, Production Engineering, Sociology and Law. Social management, however, is a field for discussions between other areas of knowledge, as the section of results and discussion of the present paper, illustrates.

In A via sustentável-solidária no desenvolvimento local (The sustainable-solidarity route to local development), França-Filho (2008a) discusses how solidarity may appear in a structuring manner, mediating ideals of local development. The author considers that a platform of this nature requires a notion of economics whose principles and values of self-regulated market do not occupy centrality in exchange relations. França-Filho (2008) assumes as a premise that initiatives to fight poverty or to promote local development cannot be individual, that is, based on supposed entrepreneurship capacity. On the contrary, responses to challenges of this kind must be collective, i.e., based on new forms of regulation of social-economic relationships.

França-Filho (2008a) puts a bet in installed capacities and in the recognition of endogenous solutions based on the idea that every place, neighborhood or community, no matter how poor, has responses to their own problems. For the sustainable-solidary conception to become effective, it is necessary the reorganization of the local economy and networks toward solidary economy as an innovative strategy of cooperation. It is an economy that advances in different parts of the world through solidarity initiatives, either as a cooperative or an association, supported by civil society or popular means. So, to cope with community's challenges in impoverished localities, solidarity alternatives should be adopted and follow economic expressions of diverse natures.

Beyond the conventional notion of economy circumscribed in the financial-monetary dimension, França-Filho (2008a) takes up Polanyi (1980) to introduce the concept of plural economy. A non-trade economy is based on redistribution, demarcated by the principle of centrality and the role of a higher instance agent (the State), which appropriates resources in order to distribute them. A non-monetary economy, in turn, is based on reciprocity and is mainly guided by the principle of symmetry and the gift logic, as

described by Mauss (2001), creating new social ties and strengthening the existing ones. Other non-trade and non-monetary economic expression, in Polanyi (1975), appears linked to domesticity, intra-family economic practices based on the autarchy principle in the search for self-sufficiency.

The economic principles of Polanyi (1980) and the sustainable-solidarity pathway for local development, as defined by França-Filho (2008a), substantially broadens teaching, research and extension possibilities in Administration, as is the case discussed here. It is an approach that surpasses, in the one hand, economic practices centered on the economic-monetary dimension, i.e., on competitive market relations and private investments for profit purposes. On the other hand, it extrapolates the State's economic-redistributive perspective, that is, the demand for governmental investments and spending.

Based on these concepts, work in traditional communities such as the indigenous ones, shows that work and production practices based on cooperation, solidarity and self-management - guiding principles of social and solidary economy - can be tools for the reconstruction of local structures and promotion of social emancipation (GUERRA, 2007; SILVA et al., 2011). The present article resumes Polanyian principles by focusing academic experiences on an indigenous community, with traditional decision-making structure and functioning centered on domesticity through autarchic authority ties – in the sense of the autarchy principle of Polanyi (1980) of self-government. For this reason, there are central subjects in the leadership of communitarian interests. On the other hand, the community of action undergoes transformations, experiencing dichotomies between tradition and renewal, between the traditional hierarchical structure and contemporary trade relations strongly outlined by cashew-related businesses. The principles and values of the Sustainable Development Goals are therefore useful guidelines for the systematization of communitarian experiences that rapidly reconfigure themselves and are, to some extent, threatened.

## SUSTAINABLE GOALS AND INDIGENOUS PEOPLES

The term sustainability always requires the articulation of more than one topic usually supported by the economy, environment and society tripod. For this reason, there is a need for an approach capable of responding to multiple interests, in the present case, territory. Territory is the place where economic, political, cultural, social relations, among others, are developed. Accordingly, territory is relevant for the management and development planning, and it is within the scope of the territory that actors and processes that build it can be identified (DIAS, 2017). Traditional territories, are then necessary spaces for cultural, social and economic reproduction of traditional peoples and communities, whether they are permanently or temporarily utilized (BRASIL, 2007).

Lands demarcation enables that indigenous people that occupy a certain territory either manifests domination or appropriation (DIAS, 2017). Difficulty of access to land or lack of demarcation are limiting factors to the accomplishment of Human Right to Adequate Food (HRAF) and to the access to public policies of Food and Nutritional Security (CALAZANS et al, 2017). A Situation of territory insecurity hinders a more emphatic manifestation of appropriation of cultural symbols (DIAS, 2014). Brazilian documents that address sustainability of these peoples, such as the National Policy for the Sustainable Development of Traditional Peoples and Communities, created by Decree no 6.040, of Feb. 07, 2007, has as main objective, according to Article 2, "Ensuring sustainable development of Traditional Peoples and Communities, with emphasis on the recognition, strengthening and assurance of their territorial, social, environmental, economic and cultural rights, respecting and valuing their identity, organizational forms and institutions" (our translation). These goals were ratified at the First National Conference on Indigenous Policy, in 2015, specifically by the thematic axis Sustainable development of indigenous lands and peoples.

As a result of demands of this segment for environmental preservation and territorial protection, the National Policy of Environmental and Territorial Management of Indigenous Lands (PNGATI) was instituted by Decree 7.747 on June 5, 2012, aiming to guarantee and promote the protection, recovery, preservation and sustainable use of natural resources in indigenous territories, ensuring the integrity of indigenous heritage, improvement of the quality of life, and full conditions for physical and cultural reproduction of current and future generations, respecting the sociocultural autonomy. Social management is in line with the purposes of the cited Decree when it highlights in their agendas the autonomy of collectivities of civil society, socio-environmental responsibility, and the physical and cultural reproduction of individuals through solidary economy and associated work. In the experience herein reported, such purposes are intertwined into a local development action oriented by SDG.

The PNGATI decree marks the initial commitment undertaken by government and indigenous peoples to managing their lands based on cultural, social, environmental, economic and political sustainability, as an attempt to construct territorial sustainability. Thus, the indigenous peoples have at hand a policy that rules present and future projects of indigenous territory management, as a direction and means of articulation between different management levels, whether public and associative or in international cooperation and internal social organization (DIAS, 2017).

According to Dias (2017, p.6), "For a sustainable economic development, it is believed that economic values cannot be greater than, or surpass, social values such as solidarity, cooperativism and 'well living' and that the local economic organization must be based on these values to achieve sustainability" (our translation). The economic planning in territorial management then can be characterized as a strategy to improve the quality of life in a territory, as long as sustainability is a determinant condition for the modes of production and not an element included after ongoing production. Following such premises, alternative, sustainable modes of exploration and production can be stimulated by technical assistance services of governmental and nongovernmental bodies, qualifying work outcomes and providing the necessary support to increase foods production and quality, encouraging new production modes such as agri-forest and intercropping.

The Sustainable Development Goals, in turn, represent the core topics that make up the 2030 Agenda of the United Nations, guiding actions in three dimensions of sustainable development – economic, social and environmental. The goals indicate the routes to be followed and measures to be adopted by the populations to achieve them (BRASIL, 2018). The SDG comprise 17 Sustainable Development Goals and 169 targets that seek to enforce everyone's human rights, ensure gender equality and empowerment of women and girls. They are integrated and indivisible and equilibrate the three dimensions cited above.

The diverse SDG targets give special attention to populations considered vulnerable, including indigenous peoples. For these peoples, SDG underline empowerment, removing obstacles and constraints to reaching sustainability; the provision of inclusive, equitable and quality education at all levels – preschool, primary, secondary and tertiary education, technical and vocational education –; doubling agricultural yields and income of small food producers, particularly women; eliminating gender disparities in education and guaranteeing equal access to all educational levels and professional training for the most vulnerable people (ONU, 2018).

The university that represents this case study has encouraged debates on the SDG, aligning its Institutional Development Plan with proposals of academic actions that also include internal extension notices with a focus on the goals of the 2030 Agenda as proposed by the United Nations. In the case of extension programs covering indigenous peoples, adaptations are required in the approach in the sense used by Freire (2014). After all, as Freire (2014) suggests, the methodology must lead to a transforming action through education, but not to extend knowledge. Rather, it deals with communication – to modify a scenario that require changes.

Freire (2014) uses the expression. "educate and educate oneself" to state that the communication methodology refutes any "educational extension". In the scope of communication, on the contrary, educator and learner actively dialogue in a process in which they are recipients and senders of knowledge, making that both are trained in a mutual relationship. In this regard, Freire's thinking echoes and finds space in principles and

INTEGRATING UNIVERSITY EXTENSION INTO TEACHING AND RESEARCH IN ADMINISTRATION: SYSTEMATIZATION OF EXPERIENCE WITH INDIGENOUS PEOPLE IN THE LIGHT OF THE SUSTAINABLE DEVELOPMENT GOALS

values of social management, specifically in the dialogical aspect, in doing with (communication) and not doing for (extension). Accordingly, university extension programs, when anchored in social management, becomes a place of debate and diverse learning possibilities, approaching students and teachers to particular universes and opening teaching and research prospects in field activities (extensionists) not based on technologies transfer or diffusion, but on collective construction, on communication, as proposed by Freire (2014).

Pursuing the values and principles of Freire's thinking, the methodology for academic actions in popular segments must be based on popular education, a privileged way to achieve what the SDG establish. Moretti and Telmo (2011) mention popular education as resistance pedagogy committed to social transformation, providing autonomy to the subjects by means of practices grounded on freedom and democracy. This form of education seeks to address outcomes of underdevelopment mainly found in vulnerable groups, which, in the case of indigenous peoples, represents one of the aspects of the challenge described later in this text.

## METHODOLOGICAL PATHWAY

This study, concerning its objective, is exploratory, because it was carried out with a segment of society where there is little knowledge accumulated and systematized (VERGARA, 2004; GIL, 1994), with few studies reporting academic experiences designed to attenuate conditions that affect the sovereignty of indigenous peoples in the scope of contents of Administrative Sciences. Regarding the type of research, it is an applied research, because it is interested in the description and classification of a phenomenon to create a system for solution of a problem (GIL, 1999).

The object of study refers to the extension action "Agri-food systems and rural women: short marketing circuits in a community of traditional (indigenous) peoples in the state of Rio Grande do Norte" developed by the Department of Administrative Sciences (Depad), supported by the Organization of Learning and Knowledge in Solidarity Initiatives, a solidary economy incubator at the Department of Public Administration and Social Management (Oasis/DAPGS). It is a joint action of teachers and students from the undergraduate courses of Administration, Nutrition, Animal Science, Agronomic Engineering, Architecture, Design, Social Work, Psychology, Tourism, Accounting and Cooperatives Management at the Federal University of Rio Grande do Norte. Participants are students and teachers acting in Social Management, Public Policies, Cooperatives Strategy and Management, Social Nutrition and Collective Healthcare at the Central Campus, in addition to teachers and students from the areas of Animal Sciences and Agronomic Engineering at the Academic Unit Specialized in Agricultural Sciences (School of Agriculture in Jundiaí).

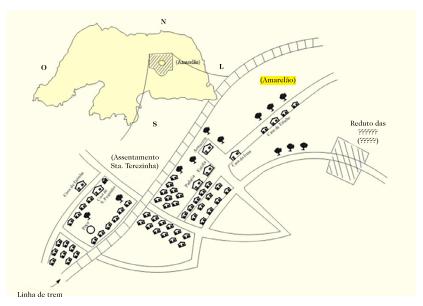
The group uses as articulator of their research-teaching-extension actions the research action defined as "the kind of social research which is designed and carried out in close association with an action or solution of a collective problem and where researchers and representative participants of the reality to be investigated are involved in a cooperative and participatory manner" (THIOLLENT, 2003, p.69). Streck and Adams (2012) indicate that participatory investigation methodologies establish a dialectical

relationship between the subjects involved. Through these relationships, emancipatory educational processes are established, inducing active participation and practices based on critical reflection. Action research has been widely used in socioenvironmental studies, especially in rural contexts, where the relationship between researchers and communities requires a shared vision (THIOLLENT; SILVA, 2003), and has been placed in the center of debates on environmental education and sustainability research (ZART, 2001; FURNIVAL et al., 2005).

The option to study this extension action research is based on three axes: a) its priority action involves hunger eradication, food security, sustainable farming and responsible production and consumption issues with relevance within the scope of studies of Administrative Sciences and in proposals of measures to accomplish the SDG; b) it addresses a vulnerable population of society (indigenous peoples and women farmers); and c) it requires and articulates various fields of knowledge to build the action plan and execution.

The action takes place in the indigenous community Mendonça do Amarelão (Figure 1), located in the rural area of the municipality of João Câmara, about 100 km from the capital, and comprises a family group of more than thousand indigenous people, being the largest indigenous community in the state of Rio Grande do Norte (CALAZANS et al., 2017), currently living in conflict lands still in process of recognition by the government. Jobs and income generation is ranked as one of the main issues of the Amarelão community, only behind the lack of water problem (GUER-RA, 2003; GUERRA, 2007). The community also hosts the first indigenous school in the state, which was inaugurated during this action research, having a pedagogical plan based on indigenous specificities and built in sustainable facilities, with solar energy and a plan to reuse rainwater and treated wastewaters.

In an approach with the community, based on a collective analysis of the reality, we sought to identify which were the existing problems, needs and potentialities. To collect and systematize the field data, we followed the action research (THIOLLENT, 2003), which means that the way of conducting the study is already a form of intervention and that the purpose of the research is action-oriented, which in turn is the source of knowledge (BALDISSERA, 2001), namely, (1) investigation, (2) thematization and (3) Planning /action.



**Fig. 1** Schematic map of the Mendonça do Amarelão indigenous community Source: Guerra (2003, p.183)

The first step consisted of collecting information on the community where the extension program was developed. A survey was conducted on the population characteristics, based on which strategic work groups were selected and assembled. We used a field log to record information methodically. Before accessing the community, the students were instructed on how to complete the field log and to respect the cultural and ethical issues of the indigenous community. Other instructions consisted in recording remarks, comments, perceptions and speeches perceived about the action theme. Based on this information, it was possible to identify the local indigenous leaders, considered important for the contacts with the community, and also to identify other individuals with potential to participate. The in-

digenous leadership comprises two women, mother and daughter, who share the command. The investigation stage was then completed.

Subsequently, for the thematization (second step of the action research), a critical analysis of the facts investigated and its theoretical elaboration were conducted, so as to facilitate the return of this information later to the population in order to transform it into an action plan, seeking to indicate the problems/needs/potentialities that might be supported by the university in their educational and social role, help in the sustainable local development and, reciprocally, contribute to the student training. At this time, the variables that emerged as priorities were considered, also in the theoretical-empirical proposition of research and teaching actions.

Later, in the community, the group used the diagnostic-participatory method as described in Mexpar (2006), which was divided into the economic, social, cultural political and environmental fields. For each field, the issues to be collectively addressed were jointly defined with the community.

Finally, for the action program, from the participatory diagnosis by field derived a matrix of analytical interpretation (problems x cause x consequence x alternatives for action). It was presented in an organized form and discussed with the community for prioritization and selection of the actions to be carried out in the university-community partnership. Thus, a systematization of common problems and needs led to a central theme, around which the action was built: management of short production circuits, and the local actors that would participate in the action, sharing information and with autonomy in decision-making and in the execution of planned actions, were also defined.

## **RESULTS AND DISCUSSION**

## Access to the indigenous community

The Food and Agriculture Organization of the United Nations (FAO, 2014) recommends that any proposal of project, program or action involving indigenous population must abide to a free, prior and informed consent process, which is endorsed by the leader of the indigenous community. This document must be construed as a collective right of indigenous peoples to make their own decisions by representatives freely elected and recognized by the community and customary institutions, to approve or not any action that may affect human rights, control their lives, livelihoods, lands and other rights and liberties. In short, such consent means that the indigenous peoples agree with the activity that has been proposed.

The consent process is free because it guarantees that there is no coercion, intimidation or manipulation; prior because the consent must be sought sufficiently in advance of any commencement of activities, and included in the research schedule; it is informed because it provides to the community all information related to the activity, such as its nature, duration, reversibility of the proposed project, project goals, location of the areas that will be affected, preliminary analysis of possible risks and potential benefits, the personnel that will participate in the conduction of the project and the procedures that the project may require, which must be objective, precise and ensure adequate understanding of the indigenous population (FAO, 2014.p.13).

There is also another situation that demands attention: the consent must only occur after its acceptance by the indigenous leaders and recognition of the researcher by the community, which also requires a previous period of immersion in the community. In this case, the access of the group was facilitated by the participation of two members of the Sisan Universidades project in the State Council for Food and Nutritional Security (CONSEA/RN) and for being recognized in a previous study (CALAZANS et al., 2017) conducted with other indigenous community in the state. Furthermore, the presence of extension actions, on the part

of the Rural and Urban Assistance Service (SAR/RN) and CONSEA/RN, at the location, facilitated the approach and qualified appropriation of the relations involving the other members of the team that later were included in the action.

## The problem situation and alternatives for action

The extension action or, according to Freire (2014), of communication, began in August 2018. However, to develop the project, the participants had to follow some procedures related to previous requirements to work in indigenous lands, which began one year earlier, through a research focused on food and nutritional security as a demand from a larger project intitled Sisan Universidades<sup>1</sup>, developed in network with UFRN, UFRPE and UFPB. In RN, indigenous lands are not officially demarcated, that is, they are not recognized or protected by the national laws, becoming a threat to food security, to local livelihood and to the sustainable management of natural resources, in addition to being the cause of land-related conflicts and abuses of power, against human rights.

The priority problem originally detected by the team in the scope of the Sisan Universidades project was food insecurity of indigenous peoples in eight communities in Rio Grande do Norte. The team then decided to begin the activities in the largest community, the one that concentrates the largest indigenous population in Rio Grande do Norte, namely, the Mendonça do Amarelão community in the municipality of João Câmara/RN. Food and nutritional insecurity – a result of the lack of money of indigenous farmers for short-circuit (short lead time) practices – causes difficulties to sustainable farming and hinders sustainable production and consumption systems due to their dependence on the intermediate role played by middlemen. In the action, short circuit means "a marketing mode that is accomplished by direct sale from producer to consumer or by indirect sale, provided that no more than one intermediate exists, (...) and to which is

<sup>1 &</sup>quot;Sisan Universidades" is an inter-institutional project (UFRN, UFPB and UFRPE) developed with the support of the Ministry of Social Development, that aims to strengthen the National Food and Nutritional Security System (SISAN) by means of a training process and mobilization of public agents and civil society developed in the states of Pernambuco, Paraíba and Rio Grande do Norte.

**Table 1** Matrix of analytical interpretation derived from participatory diagnosis, by field, conducted in the Mendonça do Amarelão indigenous community (João Câmara/RN, 2018)

	Matr	Matrix of analytical interpretation	
Problem	Cause	Consequence	Action alternative
- Deficient sup-	<ul> <li>Irrigation difficulty</li> </ul>	- Farmers' decapitalization	- Improvement of the foods processing
ply/demand	- Low crop yields	- Lack of investments in agri-	unit (communitarian kitchen)
- Lack of access	- Poor use of animal man-	cultural activities	- Use of productive backyards (training
of indigenous	agement	- Dependence on middleman	in vegetables production systems and
products to	- Little experience in prod-	- Demotivated farmers	small animals' husbandry)
short production	ucts processing	- Poor appreciation and rec-	- Training in best manufacturing prac-
circuits	- Lack of knowledge on the	ognition of the indigenous	tices
	procedures for access to	product in the region	- Organization of foods production (use
	institutional markets	- Irregular presence of the	of Production Data Sheets and standard
	- Poor communication be-	products in the city street	recipes for handcrafted products)
	tween the diverse stake-	fairs	- Destination and reuse of food wastes
	holders		from food production
			- Certification of handcrafted products
			(identity and legal compliance)

Source: Data from the participatory diagnosis by field, 2018

associated a demographic and relational proximity between producers and consumers" (MAMAOT, 2013, p. 17 [our translation]).

Hunger caused by precariousness of adequate food, as Calazans et al. (2017) point out, is an indicator of a food and nutritional security problem and must be considered in public policies. Experiences in rural properties show that agroecological family farming may contribute to the achievement of the SDG, at a local level, especially to mitigate hunger and preserve natural resources (BRUN, 2018), justifying collective measures that have been agreed and implemented (Table 1). One specific demand came from a communitarian kitchen of an association of indigenous women. The raw materials to be processed in the kitchen are purchased locally and come mostly from productive backyards, in a process of agroecological transition. A successful experience, in this regard, occurs in Africa, as cited by Petersen and Walsum (2018).

In the Borborema region in the state of Paraíba, in an area close to houses, known as "home surroundings", productive backyards began to have different components and multiple functions. Freire (2018, p.23 [our translation]) found that "(...) women concluded that the activities performed around the houses were decisive for the overall functioning of the system", i.e., they contributed to the cultivation of various vegetables, they raised small farm animals to feed the family and conducted water management for these activities. This experience indicates the potential that actions like the one described in this text have in fulfilling the SDG requirements.

In the communitarian kitchen, opportunities for handcraft production and value addition were detected. In this kind of organization, women relate with each other dialogically, based on collective deliberation, sharing their responsibilities and profits, thus being qualified as a solidary economic enterprise. The cashew nut cake, for example, is known in the region., and is part of the community identity. But two problems arise in trading this product in the short circuit: the raw material, cashew nut, is a vocation of the region that declined due to prolonged droughts in the last years. As a consequence, the product became scarce and forced the indigenous women to procure it in other communities, process it and sell the products to

middlemen. The other constraint lies on the water supply system, based on a communitarian cistern that is supplied by water tankers.

The short circuit became unfeasible due to the recent period of drought in the semiarid region. Darolt et al. (2016) emphasize that short production and consumption chains lead to changes in eating habits, stimulate education for taste, in addition to the formation of new responsible consumption groups that are ready, for instance, to join campaigns against pesticides. But this requires geographic proximity, more consumers' protagonism in the relation with producers and public policies adapted to this context. Regarding the other issue, Hadush (2018), in a study conducted in Ethiopia, found a direct relation between water scarcity and the amount of per capita spending on foods, affecting adversely the households' well-being and food security.

In the Amarelão indigenous community, some ingredients, e.g., eggs and milk, have an uneven production and are not properly stored. The action team, through reports and observation, diagnosed that the main product, cake, is produced in satisfactory quantities and sold in local and community fairs, but without packaging and standardized labeling. However, the envisioned institutional market, the National School Feeding Program (PNAE), requires products made in accordance with hygienic-sanitary standards. Furthermore, the arrangement of the production process and kitchen facilities are not suitable for safe foods handling. Even considering that artisanal production has a specific health/sanitary assessment, as set out in Resolution 49 (ANVISA, 2013), adjustments are needed. Araújo and Verdum (2010) point out that, although indigenous peoples and communities have the right to harvest and sell ecosystem forest goods and services, these processes may be hindered either by legal compliance procedures or credit and trade restrictions.

The ingredients are obtained from other community residents, and concerning gender participation in production, women grow more crops than men and are also protagonists in raising small animals. Production is used for household consumption – within the domesticity concept of Polanyi (1980) – and sometimes is traded in the community. Only one res-

ident earns income through weekly direct sales. In farming, the main food crops grown are cassava, sweet potato, beans, corn, pumpkin, watermelon and coriander. Some families cultivate fruits such as banana, guava, acerola cherry, purple mombin, umbu (or Brazil plum), coconut and mango. There is also animal husbandry (pigs, free-range chickens, cows). In these cases, the action team focused on diagnoses of supplied food, production destination and resources used.

Based on the systematization of the data collected during the visits, the academic action team found that one of the biggest challenges was lack of water for animals and irrigation. The water used comes from wells (brackish water) or cisterns (fresh water), which is supplied by public utility services with water tankers to those who are beneficiaries or purchased it with own resources. The water situation is similar to the access context in rural areas throughout the country, where, according to data from IBGE (2010), only about 30% of the residences are served by public water supply networks.

With respect to animals feeding, food leftovers are used in the yards and commercial animal feeds are rarely provided. Only one resident, who grows corn and cassava, uses these products to feed chickens. There are no records on production or number of animals, number of eggs produced, feed costs, medicines and other expenses. Production management is, therefore, precarious. Furthermore, management technologies are only kept in the memory of each producer, without any kind of recording. Zootechnical control, in the case of livestock, is vital to production management, but it does not occur.

# Action planning: university-society partnership and sustainable development

It is noticeable the indigenous community's lack of organization, considering the intense interchange they have with urban commercialization systems, with significant part of the population doing businesses externally. Considering that Administration is the science that enables achievement of results by using available resources, the multidisciplinary academic team discussed diagnosis-participatory alternatives to identify challenges and

possibilities. It was clear the need for a further approach beyond Administration, so as to ensure integral care and integrated action to solve the problems that arose. Other departments at the institution were invited to participate and joined the proposal, giving direction to the main goal of supporting endogenous solutions for sustainable development. Three approaches were then defined: (a) Enhancement of productive backyards; (b) Production management (communitarian kitchen); (c) Consumption and marketing.

The enhancement of productive backyards was achieved by a team of Agronomic Engineering in collaboration with Animal Science. An integrated production system of poultry and vegetables was then conceived. The conceived system enables sustainable production of foods by associating eggs production and chickens raising and by using resources locally available to build the facilities. In addition, environmental constraints were considered. Water, for instance, is now being reused from domestic use, and appropriate irrigation techniques and use of soil nutrients were developed by the students of Agronomic Engineering. Soil nutrients were obtained from animal manure and composting. This activity involved integrated skills of Animal Science and Architecture students in the community, who worked together to implement a demonstration unit that interconnects several SDG. Administration students were responsible for women's training on inputs production scheduling, production costs and marketing channels.

Nutrition students and teachers provided technical support to the association's kitchen in processes related to menus definition, preparation of production datasheets and meals preparation, while the Architecture student was responsible for the adaptation of the kitchen in order to ensure more comfort and safety to the workers. Administration students focused on costing, while Nutrition assessed the required layout for foods handling/preparation. Training in manufacturing best practices, both in theory and practice, was provided by Nutrition students to the women who work in self-managed kitchen, seeking to ensure sanitary adequacy of the products processing unit (community kitchen). Disposal and reuse of food wastes were also addressed. Administration mapped the production wastes

disposal sites, integrating it to the best use of the agroecological system and defining proper disposal of solid wastes, considering that fresh products are reused locally to avoid wastes (HAMILTON; RICHARDS, 2019).

With respect to sales and consumption, the following aspects were considered: separation of surplus products for own consumption and for marketing; the necessary expansion of make-to-order production and development of brand name; labeling and nutritional information, use of local media; preference for use of local ingredients, products and services provided by the community itself or surrounding towns; stocks/inventory management and selling price; access to institutional markets (government's purchases). Accordingly, students of Design, Animal Science, Agronomy and Nutrition addressed aspects related to the quality of products, nutritional labeling and selection of packaging materials, while the Administration and Accounting students prepared costs spreadsheets in a workshop on price formation. Design students worked on defining the trade name and visual identity of the enterprise, developing in a dialogue-based approach the logotype, business card, folder and packaging, using symbols of local indigenous tradition. The community articulated agents of local government such as the municipality's nutritionist, departments of education, environment and agriculture to verify the possibility of including the products in the school meals menus, in accordance with acceptance tests and legal requirements. This action proved to be slow and conflicting, indicating that government agencies underestimate the strength of smallholder family farmers' social relations (WIJAYA et al., 2018). Conversely, studies reveal people's increasing willingness to pay for locally-grown produces, provided that they maintain quality standards (JEKANOWSKI; WILLIAM; SCHIEK, 2000).

Social Work and Psychology students worked on the interpersonal and intrafamily relationships dimensions, including gender. Tourism appears in the midst of the possibility of constituting in the future an experimental space for the practice of rural tourism, with emphasis on suitable production for ecotourism (BOYS; WILLIS; CARPI, 2014). Important to emphasize that all initiatives were collectively planned and executed by

students and teachers, also including the team of the Course on Technological Management in Cooperatives Management, which is developed at the educational institution with funds provided by the National Education Program on Agrarian Reform (Pronera). Even if we take into account that indigenous lands are not qualified as areas for agrarian reform, the course has contributed to referrals for the access of indigenous population to institutional markets for government's purchases through the National School Feeding Program (PNAE) and the Foods Procurement Program (PAA), with the purpose of strengthening family farming in short production and marketing circuits.

Such broad set of actions is supported by a matrix management format in which the whole team jointly collects demands form society, discusses and sets out action strategies, assigns persons responsible for each task according to the field of knowledge and then returns to the community to discuss the proposed actions, and decision is made by the community. In specific meetings or in general assemblies, depending on the decision contents and outreach, the agenda is discussed, approved or modified and, sometimes, rejected. From the discussions has arisen the possibility of creating a community development bank (CDB), an action that is at embryonic stage, being conducted by the Administration team.

## Action execution: unified interdisciplinary proposal

The referrals for actions were viable alternatives to both university and community and also served as a strategy for valuing local agricultural and artisanal production. So, after planning, administrative and managerial knowledges were articulated with others, generating unification around the overall action goal, giving origin to a multidisciplinary execution proposal (Figure 2). The know-how of the Organization for Learning and Knowledge on Solidarity Initiatives and Studies in the Third Sector (OASIS) was also used to boost solidarity economic ventures and the autonomy of young and adult workers to, by means of associative and cooperative principles, put together the team work in order to ensure unified institutional contribution.

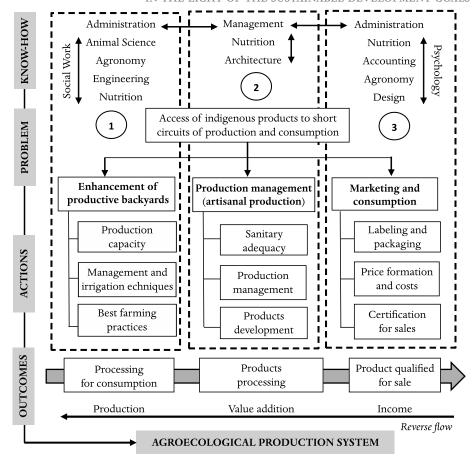


Fig. 2 Schematic design of the action developed in a unified proposal

Source: data from the action research, 2019

In such unification process, know-hows are interconnected and various systematic revisions begin to take place concurrently with field visits, feeding interdisciplinary dialogues and aligning scientific knowledges to common sense, tradition and culture, thus giving to action a transdisciplinary character. There are local constraints of productive, bureaucratic, commercial and gender nature, which require an inter- and

multi-disciplinary debate and feed back into the teaching context, also

with proposals for further investigation and local, techno-scientific and cultural development.

It is believed that, by involving teachers and students in an action like the one presented here, learning is strengthened by the teaching-research-extension triad, opening new horizons and promoting participation and social change, also allowing to broaden reasons for permanence.

Such academic environment creates room for addition of new knowledges, areas and undergraduate courses. Today, the UFRN has a high dropout rate in engineering courses (Science & Technology), especially in the first terms of the course. Costa & Dias (2015), in this regard, concluded that the permanence in higher education courses is related, among other factors, to students-teachers stimulated interaction, so that newcomers feel welcomed in a group and encouraged to participate. At the same time, the authors continue, it is necessary to point out the role played by teachers in their relationships with students and in conducting learning expectations and teaching methodology. It can be assumed that the experience reported here contributes to overcoming the obstacles addressed by the authors by instituting an innovative methodological procedure, an active methodology for integrated teaching, research and extension.

To advance in the possibilities that the team envisioned during the action execution, we have: Civil Engineering would contribute to the development of water supply strategies and systems for human and animal consumption and irrigation; Mechanical Engineering could contribute to the development of equipment to facilitate the nut shell manual extraction, which causes serious damages to the farmers' hands; Electrical Engineering could develop alternative energy sources and improve the energy efficiency of the existing one; Foods Engineering could advance in the development of novel products made with local ingredients, proper packaging testing and improved lead times. In Human Sciences, there is room for Education, Anthropology, History and Arts, as well as the possibility of retrieving memories. Possibilities are numerous and may encompass all fields of knowledge, considering that the focus here is on an integrated, sustainable local development.

## Prospects for research and teaching in Administration

The action of university students in the Mendonça do Amarelão indigenous community in João Câmara has experienced a sustainable development strategy developed by an academic group of the Course of Administration, but with great participation of students and teachers from other fields. At the same time, this action has promoted a methodological, active strategy for integrated teaching, research and extension. In 2019, participated in the action students and teachers from Nutrition, Architecture, Design, Agronomic Engineering, Social Service, Psychology, Animal Science, Tourism, Accounting, and Cooperatives Management to respond to the community's demands. This has provided a contextualized perspective for application of basic training knowledges such as anthropology, sociology, professional ethics, in addition to political, behavioral, economic and accounting contents besides other specific contents of Administration, such as human resources management, market and marketing, materials, production, logistics and financial matters. In addition, it comprises social management contents, especially relating to associative and cooperative matters, to the collegiate management of civil society organization, of solidary economy enterprises.

It is a social technology environment, so it is also an opportunity for improvement of various competences, among them, the one that "recognizes and defines problems, develops solutions, thinks strategically, introduces changes into the production process (...), transfers knowledges and makes decisions in processes with different levels of complexity" (DCN, 2005 [our translation]). Other competences to be included in the Curriculum Guidelines for the Course of Administration are communication skills, ability to negotiate with groups, initiative, creativity, political and administrative will and capacity to design and implement projects in organizations.

As a direct outcome in the Administration course, topics related to traditional peoples and communities were included in social management and public policies disciplines, production of forums with undergraduate students and experiences reporting. The action also encouraged the search for knowledge and attracted other researchers, making possible the First

Meeting of Researchers on Food Security of Traditional and Indigenous Communities, when findings from investigations conducted by students of Nutrition, Agricultural Engineering and Administration were presented, and, at the same time, new agendas for research, teaching and extension were built.

Thus, the field of research, for instance, included the need for systematic reviews of the Administration studies, at the stricto sensu graduate level, in themes related to smallholder family farming and cooperatives, and on public procurement policies such as the National School Feeding Program (PNAE) and Foods Procurement Program (PAA). In teaching, there was the pertinent inclusion of cases addressing the outreach and limits of public policies in family farming and in production and marketing management aspects mediated by work and logistic limitations in rural communities. In extension, emerged the possibility of constituting a community development bank (CDB), a subject that has been discussed with the community since May 2019, for the construction of new actions.

The academic action presented here was favored by the inherent attributes of solidary economic enterprises, e.g., horizontal organizational structure, dialogical decision-making process, solidarity, cooperation and self-management. Such elements require from the matrix-structured team the ability to dialogue, assign tasks and refer demands internally as well as to establish links and mediate decision-making in the communication with the community members. It is an active methodology focused on a dialogical process, a typical element of social management, as commented by Tenório (1998). It is worth mentioning that, as it is a rural, traditional, indigenous community, power relations and gender are recurrent topics in the team reflections and in how the community approach happens (i.e., in communication) from a perspective that surpasses the conventional notion of rural extension (FREIRE, 2014).

The action gained a multidisciplinary character (NICOLESCU, 1999) by requiring the study of a subject of a single discipline (in this case, the management of a solidary economic enterprise having as reference Administrative Science) by various disciplines at the same time. It is also present

an interdisciplinarity feature by allowing that scholars from various fields of knowledge, involved in the action, transfer methods from one discipline to another. This is the case of the style of approaching and advising organizations of the civil society, actions that are grounded, within the framework of Social Management, on dialogue. Common in the management of organizations of civil society, as object of Administrative Science, the dialogical relationship is not presented with the same vigor, for example, in the areas of Agronomy, Animal Science, Architecture and Design.

A transdisciplinary perspective, with the prefix "trans" referring to what is at the same time amongst the disciplines, appears in the action both through different disciplines and beyond any discipline (NICOLESCU, 1999). The object of study is the understanding of the current world where one of the imperatives is knowledge unity. Nicolescu (1999) argues that the discontinuous structure of reality levels determines the discontinuous structure of the transdisciplinary space, making that the transdisciplinary research becomes totally distinct from the disciplinary research, even when it is complements the latter. Disciplinary research, the author continues, is concerned at the most with a single and same level of reality. In turn, transdisciplinarity is interested on the dynamics generated by the action of various levels of reality at the same time. So, this is the configuration that the case under study assumes.

So, in the domain of Administration, the experience shows results and indicates possibilities in teaching, research and extension, within the SDG scope, considering that they are concerned with (a) poverty eradication, zero hunger, and well-being, when the academic team and community members were engaged in the improvement of a communitarian kitchen integrated with vegetables cultivation and small animals raising, especially for their own consumption (intrafamily), and environmentally-responsible consumption and production; (b) education of quality and gender equality by experimenting pedagogical processes focused on collective work management and, also, on the communitarian economic dynamics, as discussions on the creation of communitarian development bank advance; (c) dimensions of water (re)use, sanitation and energy

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sources based on the insights and challenges brought by the installation of the community's vegetables garden; (d) decent work (solidary), innovation (social) and reduction of inequalities as a consequence of the efforts in defining an endogenous model of sustainable and integrated local development; (e) sustainable community, peace, justice, life on earth and strong institutions developed by partnerships, the last of the 17 SDG. In this regard, it is worth mentioning that the experience both articulates students and teachers from various academic units at UFRN and boosts, externally, a broad network of collaboration with communities, organized civil society and governmental agents.

#### FINAL REMARKS

It is understood that Administration is a science that enables the achievement of results by using efficiently and effectively the available resources. In this regard, the profile of contemporary professionals has broadened its scope and has increasingly required education mediated by investigative attitudes and the conscious exercise of a social agent focused on economic and technoscientific, but also on socioenvironmental and cultural development. To accomplish it, an inter-, multi- and trans-disciplinary dialogue is necessary in the commitment of knowing and acting in society in the light of social responsibility, ethics and citizenship. It is a movement that is contrary to the fragmentation of knowledge and appreciation of specialties that the academic practices usually value. From this perspective, it is important to consider possibilities brought by the SDG, especially concerning the preservation of natural resources, sustainable production and consumption, which strengthen the role of the agri-food sector.

The dialogue between academic knowledges with SDG demands has, in extension programs, a privileged locus capable of integrating areas of knowledge to demands from society and public interests. The procedure outlined here has been successful in the university and society relationship, allowing the development of teachers' and students' competencies, in the social mission of the university institution, pointing to challenges and possibilities and the value of interlocution between socioenvironmental and economic interests from a local perspective. The case described here reveals significant prospects for cognitive, social and technical learning, pointing to society and university symmetry.

The action discussed here has limitations relative to the accomplishment of demands that gradually arise. In this regard, numerous demands are not feasible or suffer major delays due to the team's financial-budgetary restrictions to meet immediate needs. Likewise, the community does not have funds for investments. In addition, it should be taken into account that the action is developed by students and teachers from various courses and academic units, and from this fact another difficulty derives: schedul-

ing collective meetings and field activities. Delays happen and, sometimes, the team receives complaints regarding the time spent in accomplishing the tasks. But similar fact occurs in the community regarding the possibility of arranging meetings and events that the university team requests. Important research gaps resulting from the action appeared, such as hindrances to implementing the National Policy for Sustainable Development of Traditional Peoples and Communities, technical qualification of small farmers, difficulties in intersectoral articulation between foods production and consumption policies, the need for a longitudinal study of results and impacts of the action on the community.

An academic reality meets with a rural reality, with characteristics of traditional (indigenous) peoples, whose values, rites and routine practices are different from those experienced by students and teachers in the academic context. Hence, teaching functions (within the university environment) and of research and extension, externally, are reconfigured in terms of application and in the epistemological domain. The case studied here thus confers to the Administration education substantive contours, surpassing the hegemonic notion of profits-oriented management or in bureaucratic rites in the light of efficiency and efficacy principles. The rationale was focused on Administration training. But for the rationale and practices consubstantiated here, several fields of knowledge are useful. It is then concluded that curricular extension appears as an opportunity for the students' training, improving practices and making appropriate knowledges and theories compatible to local contexts. However, it is still necessary to follow institutional policies that consolidate extension possibilities and contributions to the permanence of the student in higher education and reduce school dropout.

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INTEGRATING UNIVERSITY EXTENSION INTO TEACHING AND RESEARCH IN ADMINISTRATION: SYSTEMATIZATION OF EXPERIENCE WITH INDIGENOUS PEOPLE IN THE LIGHT OF THE SUSTAINABLE DEVELOPMENT GOALS

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