



Scientific research and Portuguese colonial policy: developments and articulations, 1936-1974

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Abstract

The development of a colonial scientific policy by the Portuguese state in the twentieth century is investigated by studying the Junta de Investigações do Ultramar. Directly subordinated to the Ministério das Colônias/do Ultramar and based in Lisbon, this entity's main attribute was to coordinate the scientific studies to be undertaken in colonial territories under Portuguese rule. The aim is to identify the institution's origins and objectives, to understand how its activities tied in with colonial policies, to detect what impacts the international scenario had on its trajectory and its strategic options. Special attention is given to the period that started after the Second World War, which was aligned with the mirage of development and reacted against the progress of the anti-colonial movement.

Keywords: scientific missions; colonialism; Portuguese empire; Junta de Investigações do Ultramar; Portugal.

The 'colonial science'¹ produced about and in territories colonized by Portugal from the last quarter of the nineteenth century until their independence in 1975 is absent from Portuguese historiography.² Likewise, science and technology research relating to what has been called the third Portuguese colonial empire³ is still thin on the ground. The subjects that have gained more interest are anthropology, engineering and medicine (namely: Roque, 2001; Carneiro et al., 2000; Diogo, 2009; Varanda, 2004; Bastos, 2007 and Amaral, 2008) and the period that has gained most study is the nineteenth century. There is no body of research, combining colonial history and the political and institutional history of science, that focuses on the development of the scientific research policy for the colonies and the articulations between the colonial state's political and ideological objectives, the development models imposed on the colonial territories, and the international scenario.

To consider the dynamic relations between political power, ideology and science in the context of Portuguese colonialism in the 1900's, we bring to light the case of the Board of Geographical Missions and Colonial/Overseas Research (Junta das Missões Geográficas e de Investigações Coloniais/do Ultramar, or JIC/JIU), an entity that operated under the auspices of the Ministry for the Colonies/Overseas (1936-1973)⁴, whose task was to coordinate and promote scientific work in overseas territories under Portuguese rule.

We hold that the historiography of Portuguese colonialism in the twentieth century and the studies of colonial science in Portugal in the same period and its contemporary legacies have not yet appraised the work of the JIC/JIU. This is a crucial object of study, not least to understand the dialectic relationship between knowledge, discourse and colonial power; to find out what agents, networks and methodologies were involved in producing scientific knowledge in and about the colonies and how it was communicated and circulated; to verify to what extent Portuguese colonial science was engaged with the national and international scientific systems; and to reveal the impacts of colonial science on the lives of colonized peoples and territories. Nevertheless, the historical trajectory and role of this institution remain largely unexplored. We have uncovered just one 'historical memoir' prepared for the celebrations for the centenary of the Institute of Tropical Scientific Research (Instituto de Investigação Científica Tropical) (A. Lobato, 1983, updated by M. Lobato, 2008), which succeeded the Board after the introduction of democracy and the end of the empire. There are also some individual contributions on the Board's missions in the domains of anthropology (Rui Mateus Pereira has written at length on the subject, culminating in a doctoral thesis [Pereira, 2006]), cartography and geodesy (Costa, 2006; Santos, Lobato, 2006). A broader critical study is no simple task, given the institution's heterogeneity, versatility and longevity, plus the sheer volume and dispersal of its archives (many still to be discovered, inventoried and made available), its bibliographical output and scientific collections.

In this article we will discuss the development of Portugal's colonial scientific policy and the trajectory of JIC/JIU within the context of Portugal's colonial policy and the international scenario. We use a historical method to collate and analyze a documental corpus composed essentially of the legal documents creating the JIC/JIU research entities, their respective activity plans and reports (those published in proceedings and those that

remain unpublished) and the archives of the Board's Executive Committee (researchers' personnel files and research entities' files).

Origins and first missions: inventory and prospection

In the 1930's, the Portuguese Estado Novo ("New State")⁵ heralded a new stage in the country's colonial administration, of an imperial, nationalistic, centralizing nature. Its goal was to create an 'imperial mystique' capable of mobilizing people's spirits in pride and defense of the colonies. This "ideological offensive" was basically translated into the holding of colonial exhibitions and conferences, the publication of journals and collections based on imperial themes and the reformulation of school curricula to serve the colonial cause (Alexandre, 2000, p.188-189).

This atmosphere of enthusiasm surrounding the imperial project was not just experienced in Portugal. Between the two world wars, the mythification of the empire using arguments of a universalistic nature, based on religion or the Enlightenment, was also found in other countries (Great Britain, France, the Netherlands, Belgium): "everywhere, colonization was done in the name either of the need to exploit the riches of the African continent or the duty to 'raise' backward or inferior races, spreading the benefits of western civilization" (Alexandre, 2000, p.229).⁶ Nevertheless, in Portugal, a correlation was established between the colonial issue, the regime and the nation's identity, which enabled the sacralization of the empire and left no room for anti-colonial currents, which only became significant in the latter years of the Estado Novo. Thus, while in other colonial powers, nationalism was expressed either through support for or a rejection of colonial expansion, in Portugal, nationalism, whether monarchic, republican or Salazarist, was invariably imperialist (cf. Alexandre, 2000).

In the academic world, opinions were voiced criticizing the belatedness of Portugal's scientific occupation of its colonies, and called for effective state investments in colonial science performed *in loco* by teams of Portuguese researchers. Science was presented as a way of assuring the success of the colonization process and the cost-effective exploitation of colonial resources, bringing obvious economic dividends for the country. Such was the case of Luiz Carriso, professor of botany at the University of Coimbra and leader of the first botanic mission to Angola financed by the JIC in 1937 (Varanda, 2007, p.33), and Mendes Correia, professor of physical anthropology at Porto University, who became the president of the JIC in 1946 (Pereira, jul. 2004-jun. 2005, p.213-214).

In 1936, the Board for Geographical Missions and Colonial Research (Junta das Missões Geográficas e de Investigações Coloniais, JIC) was created within the Ministry for the Colonies to guide and promote scientific research in the different imperial possessions.⁷ It replaced the Cartography Commission, which had been founded in 1883 to organize and prepare geographical and hydrographic maps of Portugal's colonies. Despite the propaganda surrounding the Estado Novo's imperial project in the 1930's, it was only in the mid 1940's that the JIC was actually fully structured and able to undertake the investigative work it was empowered to do by law. Alongside geographical reconnaissance, a broader 'scientific occupation' was planned that would expand into new areas of knowledge, such as geology,

botany, zoology, physical anthropology and ethnography. With limited funding and a restricted physical structure, the Board was unable to execute its five-year plan of activities in full (Portugal, 1945, p.188). Campaigns were pursued within the ambit of the Geographical (read: geodesic) Missions to Angola, Mozambique, Guinea and Timor, the Hydrographic Missions to Angola and Mozambique, a Botanic Mission to Mozambique, a Zoological Mission to Guinea, and an Anthropological Mission to Mozambique. Despite their value as a tool of development, geodetic activities continued to be seen as the most important technical and scientific activity for attesting effective rights of ownership ('old' imposition from the Berlin Conference of 1884-1885). Until the mid 1940's, the Board's work continued to be directed above all into the marine and land cartography of Portugal's colonies.

In response to external factors the Portuguese government felt the need to rethink its scientific occupation model for its overseas territories. These factors include the orientations of the League of Nations, which put forward a new conception of colonial policy as a responsibility of colonial powers, which were encumbered with the duty to develop their territories and civilize colonized peoples; "*la mise en valeur rationnelle*" (rational development strategy) for the empire, a widely heralded project in France, for instance, shortly after World War I (Bonneuil, 1990); the public and private initiatives of other European colonial powers towards the scientific occupation of their colonies, such as the African Research Survey led by Lord Hailey⁸; the existence of centralized research entities in other colonial capitals (e.g. Institut Royal Colonial Belge in Brussels, the Royal African Society in London); and the ever present sense of vulnerability of the Portuguese empire due to perceived foreign designs.⁹

After a long period of study and discussion involving politicians and scientists, the Board (JIC) was finally restructured by decree no. 35.395 of December 26th, 1945 (Portugal, 1945, p.187-207), as an "open organism of an unlimited number of members destined to the academic study and discussion of scientific colonial problems." Its members were appointed by the Minister for the Colonies and represented different branches of knowledge, the universities of Lisbon, Coimbra and Porto, and the Naval Ministry. The chairman of the Executive Committee reported directly to the Minister for the Colonies, who was responsible for guiding and overseeing the Board's activities performed by the missions doing fieldwork in the colonies and laboratory and office work in Portugal, enjoying administrative and financial autonomy, and the specialized centers based in Portugal. Mission chiefs and their assistants and the directors of the centers were chosen from the members of the Board or officials of recognized technical or scientific merit. In practice, the JIC/JIU fed off the Portuguese university system and eased its access to colonial lands.

JIC was responsible for "guiding studies with a view to the pure knowledge of man and nature"; research geared towards immediate applications was entrusted to other entities working in medical, agronomic or zootechnical research (Portugal, 1945, p.189-190). Despite this formal technical separation, the knowledge produced within the ambit of the Board was intended to be used for practical purposes of an economic nature and for race relations.

It was expected that the JIC's actions would be felt in the area of "geographical, geological, anthropological and ethnological sciences, zoology and botany" (Portugal,

1945, p.191).¹⁰ A focus was kept on “*sciences naturelles d’inventaire et de prospection*” (natural sciences of classification and prospection)¹¹, although botany and zoology were also linked to improving agricultural production, for instance, through entomofauna studies. Meanwhile, the anthropological focus was primarily geared towards making an anthropological classification of the indigenous peoples¹² according to the “somatic features and psycho-physical potentialities of the different colonial peoples and tribes” (p.25) – which can be interpreted as their aptitude for work. This classificatory effort, based on exhaustive anthropometrical surveys, was designed to supply elements to inform policies for indigenous peoples and their administration (although there is no record of their being put into practice). The study of cultural and social dimensions was not included, “thereby contributing to the crystallization of the image of colonized peoples as ‘races’ whose mental development and civilizations were backward” (Pereira, jul. 2004-jun. 2005, p.230).

Economic development: a new paradigm for colonial scientific research

In France and Britain’s African colonies, a “modernization of colonialism” was initiated immediately after the Second World War (Cooper, 2004). For both countries, Frederick Cooper judges that an implicit theory of modernization emerged first in the colonial offices and that this set the course of colonial policy in French and British administrations in the 1940’s. The new focus on development programs and a concern with the people’s social welfare emerged in the context of a series of strikes and uprisings in their possessions. The development plans for the colonies were put into practice straight after the war: in Britain, via the Colonial Development and Welfare Act of 1940, which was implemented after the war; in France the Fonds d’Investissement et de Développement Économique et Social, which started in 1946. The inquiry commissions investigating the strikes and the labor inspectors’ reports were crucial in articulating this implicit theory of modernization even before it was systematized by social scientists. Scholars responded to the new call for specialization, especially in economics, and the new set of social problems they were presented with to analyze (cf. Cooper, 2004, p.10-24). In the 1940’s, the British and French colonial governments conceived of development as an idea that could put a new lease of life into their colonial projects, but it actually proved to be central to the process by which the colonial elites were convinced that they could renounce the colonies (Cooper, Packard, 1997, p.64). In the Portuguese case, there are no grounds for stating that the development efforts for its colonies came in response to a series of strikes or uprisings¹³ or from the demands of African social movements. The causes lie rather in the development of domestic politics – the opening of the Estado Novo to the country’s economic modernization and industrialization after 1945 and especially in the 1960’s¹⁴ – and above all the international context.

With the end of World War II, and with it the repudiation of Nazi totalitarianism and ‘scientific racism’, Portugal was faced with growing international pressure to grant its colonies self-determinism and the beginnings of emancipation, first in Asia and soon afterwards in Africa. This new set of international circumstances forced Portugal to rethink its colonial policy, which went through a reformulation that involved altering legislation and bringing in new economic development measures for Angola and Mozambique. The

1930 Colonial Act was incorporated into the Portuguese Republic Constitution in the constitutional review of 1951, thereby affirming the “unity of the multi-continental Portuguese nation”. The new text replaces the terms ‘colonial’ and ‘colonial empire’ with ‘overseas provinces’ and ‘overseas’. This ‘cosmetic’ operation was done in the face of history. Soon, the Bandung Conference (April 1955) established the Non-Aligned Movement (relative to the two rival systems of capitalism and communism) and solidarity between Asian and African nations in the fight against colonialism and the conquest of independence. When Portugal joined the United Nations (UN) in 1955, its colonialism was put under international scrutiny.

During the 1950’s, along with the establishment of the principle of assimilation in the Constitution, there also came the beginnings of an adoption of a “Lusotropicalist vulgate” (Léonard, 1997, p.223) in the Portuguese state’s official discourse, which was extremely useful for foreign policy purposes and also for domestic consumption, promoting cohesion and mobilization around its overseas plans. Lusotropicalism was a term coined by Gilberto Freyre during an official visit to Portugal and Portuguese colonies in 1951-2 on the invitation of the Minister for the Overseas. Basically, Freyre (2010, p.35-124) held that the Portuguese had a special capacity to join with the tropics by a bond of love and not of interest, and there to constitute multiracial societies marked by mixed races and the interpenetration of cultures. This predisposition was the result of its own ethnical and cultural past on the cusp of Europe and Africa and its extended contact with Arabs. If Brazil was the epitome of Portugal’s colonial brilliance, “in Africa and Asia” the Brazilian social scientist had come across “other Brazils” in the making, the “fruit of fraternal love” (Freyre, 2010, p.224). The penetrative capacity of the maxims of Lusotropicalism in the discourse of Portugal’s elites and in common sense resides in the fact that it reworks a few preexisting ideas about the specific nature of Portuguese colonization, giving it putatively scientific credibility (Castelo, 1998).

In the new world order after the Second World War, the Board went through a period of unprecedented expansion in the number of organisms it created, the number of collaborators it had, the number of papers it published, the diversity of scientific areas and activities it developed, which stretched from the ‘natural sciences of classification and prospection’ to agrarian sciences, fishing and fisheries sciences, social and political sciences, history and ecology.¹⁵ From 1946 to 1971, 61 new entities were created, of which two were Institutes of Scientific Research, one in Luanda, Angola, and the other in Lourenço Marques, Mozambique, along with five commissions, 16 centers, 26 missions, 11 brigades and one museum (the Museum of Overseas Ethnology, based in Lisbon). Additionally, the Board formed scientific centers, laboratories and other research units, many of which were actually housed in higher education and research institutions in Portugal.

There was an equally significant reinforcement in terms of public investments.¹⁶ The financing of the Board – its entities, activities and researchers – came from Portugal, via the State budget, and from the colonies’ respective budgets. However, the greatest share came from the colonies, especially Angola, followed by Mozambique.

This new phase of the Board’s existence was closely related to the need to have scientific bases for the developmentalist policies that the Estado Novo designed for its colonies in

the 1950's-1960's. The old argument about the “white man’s burden”, the “civilizing mission” and the education and elevation of indigenous people by work, which effectively shrouded the predatory economic exploitation of the colonies’ resources and peoples for Portugal’s own benefit, gave way to the ideal of the economic development of African territories and peoples supported by increased public and private investments. The new idea gained ground to justify interventionist state policies in colonized regions and as a device for reinforcing and (re)legitimizing Portuguese sovereignty. This situation was not unique to Portugal. In fact, it was following – some years later and with less voluminous investments – a movement already seen amongst the other European colonial powers.¹⁷ The boost that colonial studies had in Britain, France and Belgium after the First World War had not been mirrored in Portugal. Although their importance was recognized and restated in colonial forums (Geography Society of Lisbon, colonial congresses, etc.), it was only in the 1950's that Portugal started to live up to the “second colonial occupation”, a concept initially coined to analyze the British empire after the Second World War (Low, Lonsdale, 1976).

The work of the JIU was expanded to encompass basic research for public works (dams, roads, bridges, ports, electrification projects), support for agriculture (coffee, sisal, sugar, oil crops, cotton, etc.) and mining (diamonds, oil, iron ore) for foreign trade, and rural settlement (*colonatos* associated with irrigation).¹⁸ In this context, most of the work was undertaken by the Geographical Mission to Angola (created in 1941); the Hydraulic Agricultural Mission to the South of Angola (1951) and the Pedological Mission to Angola (1953), which succeeded it; the Study Commission for the Protection of Overseas Agricultural and Forest Produce (1951), taken forth by the Study Brigade for the Protection of Overseas Produce (1954); the Center for the Study of Coffee Rust (1955); and the Agronomical Study Brigades of Cape Verde, Guinea, Macau and S. Tomé (1958), which gave rise to the Mission for Overseas Agronomic Studies (1960).

There is a strong link between the expansion and orientation of the JIU’s work and the objectives of the Second Development Plan (1959-1964). Some of the Board’s technical staff and scientists were fully engaged in this process, and were often responsible for leading and preparing sub-programs for state intervention in their areas of expertise.

The aims of the Second Development Plan for the Portuguese overseas provinces stood apart from those set forth in the plans designed for foreign overseas territories in two fundamental ways. Firstly, “one particularity that has to do with the objectives, expressed by the effort – the only one of its kind in known plans – to intensify white settlement”; and secondly, the “exaggerated importance of the infrastructure sector and, on the contrary, relative limitation of social investments and funding for native structures” (Salgueiro, 1959, p.55-56). In this phase, Portugal seemed to think that the modernization of its two main colonies must include a rising influx of settlers from Portugal and used a development model based on boosting production and trade capacity, geared particularly towards the European-born population, which was on the rise.

In 1951, over 43 percent of the money for the development of British colonial territories went to social development, meaning social services, especially health and education; in Belgian Congo, social spending represented 31 percent of the budget; in French territories,

this type of expenditure took up between 14 and 29 percent of the budget in the first four years of the plan (Hailey, 1957, p.1325-1326).

Portugal's Second Development Plan undertook to invest 9,286,400 *contos* (a third more than in the First Development Plan), with the largest proportion of the budget earmarked for communications and transportation, followed by expenditure on settlement. These projects demanded the input from previous or future studies mediated by the JIU. Scientific study of the territory received 4.4 percent and the respective funding (406,300 *contos*) was split into general cartography, geological studies and pedological studies.

Following the same rationale, and coordinated closely with the Second Development Plan for the overseas provinces, a Mission for Overseas Agronomic Studies (Meau; 1960) was created, which would operate with brigades based in the directly governed provinces (Cape Verde, Guinea, Macau, São Tomé and Príncipe, Timor) and specialized work groups. With the economies of Portugal's colonies dependent on agricultural activities, it was acknowledged that agronomy studies, based on reliable scientific knowledge of the physical and human environment, were of particular importance for assuring the desired overseas development and settlement (Portugal, 23 jan. 1960, p.72). Alongside the basic agronomy research needed for developing agriculture and correlated activities in overseas provinces, in line with the programs from the Second Development Plan¹⁹, Meau was also expected to devise and establish, in liaison with provincial governments and services, agronomy research establishments, which gave rise to the Institute of Agronomy Studies in Angola and in Mozambique.

The coordination between economic planning and scientific research for overseas provinces was continued and extended to other sectors of the economy. In recognition of the "social and economic interest that the increase in fishing activities in overseas provinces presents", and taking into account important attributions for such purpose, the Mid-term Development Plan (1965-1967) imposed the "need and urgency to restructure the established research services for such a large sector" (Portugal, 1966, p.369). This was the justification for the creation of a Center for Tropical Aquatic Biology within JIU, devoted to basic research, along with a Center for Overseas Bio-Oceanology and Fishing (CBPU), for applied research, which was responsible for the new bio-oceanology and fishery missions to Angola and Mozambique, whose task was to develop fishing technology research to support the industry.²⁰ One of CBPU's tasks was to rapidly divulge the findings of applied and technological research, especially those that might contribute more directly to the economy and, more widely, to the improvement of fishing activities, keeping the official entities for industry development, inspection and support fully informed. The centers were based in Lisbon and the missions were in Lobito and Lourenço Marques.

Impacts of international scientific cooperation: a social milestone?

In the late 1940's and early 1950's, different multilateral agencies were created that contributed to internationalizing development (Cooper, Packard, 1997, p.9). It was also in the 1950's that cooperation efforts between colonial powers grew and deepened in order to foster development through technical and scientific programs.²¹ Portugal was fully active in this process, joining the new international entities the Scientific Council

for Africa South of the Sahara (CSA), an advisory group of experts, in 1949; the Commission for Technical Cooperation in Africa South of the Sahara (CTCA) in 1950 while maintaining its collaboration with older organisms (International Labor Organization, Incidi, etc.), and taking an active part in conferences held in different areas of knowledge, while the JIU sought to fulfill the new recommendations with appropriate lines of research. Portugal had high expectations for regional cooperation, but with the strengthening of the anti-colonial movement and the Africanization of the CTCA, it was pushed out of the organization after the 17th session held in Abidjan in 1962 (Gruhn, 1971, p.461, 465). It was a serious blow, and signaled the speed of change in power relations.

In view of the new international political scenario, the academic and scientific community involved in colonial issues realized that the social and political problems the country was facing (in the short- and mid-term) in its overseas possessions, especially concerning the administration of colonized peoples, required the recourse to the social sciences, especially sociology and cultural anthropology, for a modern legitimization of colonial policies and specialized advice for the administration.²² It was in this context that in 1956 the Center for Political and Social Studies (Centro de Estudos Políticos e Sociais, Ceps) was created within JIU, upon the suggestion of Adriano Moreira, then a professor at the High Institute for Overseas Studies (Instituto Superior de Estudos Ultramarinos), a school that prepared colonial administration officials. Interestingly, the idea of founding such a center was formulated after Adriano Moreira took part in the first meeting of the CTCA's Inter-African Conference on Humanities, held in Bukavu (Belgian Congo) in September 1955. Later, two more centers were created: the Center for Cultural Anthropology Studies (1962) and the Center for Community Development Studies (1963).

Within Ceps, the following bodies were created: the Study Mission of Association Movements in Africa (focusing on the study of secret movements); the Study Mission of Ethnic Minorities in Portuguese Overseas Provinces, which prioritized the Macondes in northern Mozambique; the Mission for the Study of the Attraction of Big Cities and Rural Welfare; the Study Mission of African Missionology; the Study Mission of National Income from Overseas; and the Commission for the Study of Productivity in Africa. The creation of some of these missions was directly related to an attempt to uncover potential threats to Portuguese sovereignty in Africa coming from within the colonies or from neighboring countries.²³

Ceps was granted responsibilities that involved "preparing and formulating doctrines" in the "battle on the ideological field" to defend the "foundations of the Portuguese view of the World as relating to intercultural and inter-racial relations and the consequent mission of our People in the construction of the destiny of Humanity by the progress of what we have understood as true Civilization" (Abecasis, 5 dez. 1962). According to Adriano Moreira (2009, p.156), Ceps "was not restricted to multiplying the study missions sent to the territories, nor did it prevent the sharp contradictions between the underlying values, including those between the historical inheritance and the novel demands arising from circumstances, which is not unusual when correcting actions and pointing the way forward."²⁴ Aware of the political influence of their work and their influence at the highest levels (Carvalho Martins, Minister for Health and Welfare, was on the Advisory Board of

Ceps and was responsible for publicizing the work amongst the Council of Ministers, which was the same as saying to the dictator, Salazar), the Ceps researchers deemed that if their conclusions and recommendations were adopted by rulers, colonialism could be transformed, purged of its most harmful aspects, and perpetuate Portuguese sovereignty in Africa via peaceful routes. However, in 1961 the colonial war in Angola broke out, which in 1963 spread to Guinea and in 1964 to Mozambique. Adriano Moreira had joined the government in 1960 as an under-secretary of state for Overseas Administration, prior to his rise to the position of minister. The reform-minded measures his ministry took (1961-1962) were grounded in Ceps research and Lusotropical ideals – abolition of the statutory differentiation between ‘indigenous’ and ‘civilized’ people, of forced labor, and of obligatory cultures, a new law of the land, provincial settlement boards, etc. – but they failed to halt the emancipation process. Indeed, they were perceived and feared by Salazar himself as a factor that accelerated change.

The relationship between the Board’s options and foreign relations can also be seen in the fact that missions were created to respond to situations or recommendations of international scientific and technical cooperation. Some examples: the Physical and Human Geography Mission to Guinea (1947) headed by Orlando Ribeiro was an attempt to compile knowledge about the territory where the Congress of Africanists from West Africa would take place; the Mission for the Study of the Attraction of Big Cities and Rural Welfare (created in 1957) centered around topics that had been the object of inquiry by Incidi and recommended by CTCA; the creation of the Study Mission of National Income from Overseas (created in 1962) encapsulated recommendations by CSA and CTCA; the Commission for the Study of Productivity in Africa was created in 1958 to investigate that subject in Angola and Mozambique, alongside an investigation in Africa under the aegis of the CTCA; the Planning Commission for Scientific and Technological Research and its Mission for Collecting and Processing Data on Scientific and Technological Research (created in 1967) served not just to enable the Ministry for the Overseas to plan the corresponding activities as a function of its social and economic development programs, but also to meet certain requirements of the Organization for Economic Development and Cooperation (OECD).²⁵

The development of the Board’s activities from the late 1950’s and into the 1960s was designed to support rural development and settlement, as well as to sustain the model of social and economic development and modernization for the territories, taking into account elements of social justice and improving living conditions within the ‘multi-continental and multi-racial Portuguese nation’. The research also incorporated another goal expressed in the Third Development Plan (1968-1973): the “progressive elevation and promotion of human dignity within the Portuguese community” (Portugal, 1968, p.36).

If until the 1960’s, economic development was generally seen as an alternative to decolonization (MacLeod, 2000, p.12), Portugal prolonged this illusion for another decade, and the colonial elites convinced themselves that material signs of development would curb the independence movement.

The paradigm shift in Portugal’s colonial studies involved a recourse to research into agrarian development (especially the work of Meau under the leadership of Hélder Lains e

Silva, which also incorporated sociological research) and social studies (Ceps and respective study missions, but also some research by the Mission of Overseas Physical and Human Geography, headed by Orlando Ribeiro). Generally speaking, the research sector that garnered most interest for the overseas provinces in the last two decades of the Portuguese Empire was that of agricultural sciences. According to the head of the Planning Commission for Scientific and Technological Research (CPICT), this sector “absorbed over half of the financial resources and over half of the university graduates engaged in research work, for this has been the sector with the greatest power of persuasion because [engineers and technicians from this area] have persuaded the administration of the need for this sector to intervene” (CPICT, 3 jun. 1971, fl.212).

In 1970 the Overseas Council (advisory body of the Ministry for the Overseas) was invited to reflect upon the way scientific research was structured in the overseas provinces. It then defended intensifying scientific and technological activities of a pragmatic and utilitarian nature, with the aim of serving people’s immediate needs. The areas highlighted as priorities were social studies and ecology. The latter was to study the undesirable indirect effects of projects such as the Cahora Bassa dam, which had a severe impact on the ecosystem and which could cause irreversible imbalances (cf. Silva, 1974, p.35).

The reform of the Board introduced by decree no. 583/73 of November 6th, 1973 (which would be put into practice as of January 1974) did not just rename the institution the Board for Overseas Scientific Research (Junta de Investigações Científicas do Ultramar, Jicu) but also: deposited considerable decision-making power (in scientific, technical and administrative terms) in the hands of the chairman of the Board, who was appointed by the Minister for the Overseas (as were the other directors); established hierarchical links between the centers (fundamental parts of the new structure) and three central institutes, which would coordinate research in the earth sciences, biological sciences and human sciences; extinguished certain entities and activities, namely in the domain of political and social sciences²⁶; included entities and activities with no scientific component (libraries, document centers and archives, especially the Overseas Historical Archive of the Ministry for the Overseas); and created new positions for personnel. This reform was strongly disputed internally, not least because the “proposal to transfer personnel from JIU to Jicu” excluded many collaborators (Silva, 1974). After the coup d’état of April 25th, 1974, the researchers took the opportunity to further stress their disagreement with the course that law was imposing on the institution. There was much internal strife and this was exacerbated by the revolution and the subsequent decolonization process. After 1975, the Board went through a long period of uncertainty. Although its designated role was soon that of fostering cooperation for development with former colonies and in general with tropical countries, the institution had a hard time ridding itself of the stigma of its colonial past.

Today, the priorities of the Instituto de Investigação Científica Tropical (Institute of Tropical Scientific Research, IICT) include “following up on the fulfillment of the Millennium Development Goals” (IICT, s.d.) proclaimed by the United Nations in 2000, which indicates that the concept of development is not just at the heart of the international political agenda, but continues to guide the institution that succeeded the former Board in post-colonial times.

Final considerations

The Board was a high-level entity for scientific research in and about the colonies. Its pivotal role in colonial scientific policy was two-pronged: to promote and organize 'colonial science' (funding research entities and activities) and to provide support for the execution of colonial policy through science. The development of the Board's work (from its predecessor, the Cartography Commission, formed in 1883, until decolonization) was dynamically interrelated with the evolution of the concept of empire, the economic model and the race relations model to be imposed on the colonies, and international politics.

Basically, until the end of the Second World War, the JIC's activities were articulated with the aims of the colonial power and with the prevailing model of economic exploitation and race relations, in a scenario in which the foreign designs and threats to the integrity of the Portuguese empire still echoed. The two fundamental objectives to be attained were: the effective occupation of the territories and the extraction of natural resources and exploitation of indigenous labor. As we have seen, the first missions were primarily geared towards geodesy, which had to do with territorial reconnaissance and occupation, as well as geology, botany, zoology and physical anthropology, which had to do with taking full advantage of the natural and human resources. Economic exploitation based on forced labor in obligatory cultures enabled the colonial enterprise to dispense with other areas of knowledge.

During the decolonization era, the international order imposed a redefinition of Portugal's colonial policy towards an affirmation of national unity and the harmonious development of all the parts of a multi-continental, multiracial state, anchored ideologically in an instrumental interpretation of Lusotropicalism. The scientific and technological research done by the JIU missions was placed (and placed itself) at the service of the modernization and economic development of overseas provinces and ultimately the social improvement of their people. Although the missions linked to the disciplines of classification and prospection continued to have a guaranteed place in the Board, there was room for applied social studies, and agronomy studies gained weight, demonstrating the dialectic relationship between science and political power.

The evolution outlined here is not completely linear, because there are lines of research connoted with boosting the yield of native labor that continued after 1945, unlike in other countries. Such is the case of the anthropometric studies by the Anthropological Mission to Mozambique, the Biological Anthropology Mission to Angola, the Anthropological Mission to Timor, the Center for Overseas Ethnological Studies (Centro de Estudos de Etnologia do Ultramar) and the Center for Biological Anthropology Studies (Centro de Estudos de Antropobiologia), its successor, as of 1962.

Although in the scientific field devoted to researching in and on the colonies, namely in social sciences, critical analyses of the most discriminatory aspects of the colonial system arise, the next step is never taken: the defense of the right of the people to self-determination. The limitations imposed by the nature of the Estado Novo (a conservative, colonialist dictatorship), the official position towards the intransigent defense of the nation's integrity throughout different continents, the censorship and self-censorship that the researchers were subject to, the values and myths about the supposed exceptionality of Portuguese colonialism that many (probably most) also shared help to explain why.

From the perspective of the Portuguese State, the interests underpinning the action of the Board were initially of a diplomatic and administrative nature (setting borders, territory reconnaissance). The second phase brought a preponderance of economic interests in the strict sense of the word (the creation of infrastructure, increased production capacity, orientation of colonial economies to the market, in favor of Portugal and a fast-growing white population); and finally, concerns of a social and economic order emerged, centered around improving living conditions for the people, and promoting their social welfare and community development. Associating the idea of development with the Lusotropical ideals of constituting multiracial communities that are harmoniously integrated with the nation as a whole, the *Estado Novo* sought to exorcize the political implications of development in the colonies: self-determination and independence.

As the centralizing body for the Portuguese state's scientific policy for the colonies, the JIU was one of the instruments used by the regime to help the empire last longer in the decolonization period.

NOTES

* The research presented in this article served to establish basic knowledge, derived from documental research of written sources, as an initial stage of the project on "Scientific Heritage: collections and memories", which the author has undertaken at Instituto de Investigação Científica Tropical (IICT) since July 2009 as part of the "Commitment to Science" program financed by Fundação para a Ciência e a Tecnologia (Portugal). The project aims to gather and analyze the scientific and professional life histories of former researchers and staff members of the Board of Overseas Research (Junta de Investigações do Ultramar, JIU, now IICT) that took part in scientific missions to Portuguese colonies. The interviews will be made available at the Arquivo Científico Tropical Digital Repository (<http://actd.iict.pt>) until the end of the project in June 2014.

¹ We refer to any science produced during the colonial era that involved Europeans working in colonial contexts, which includes science done in Europe on colonial resources and science done in areas that were involved in European commercial or territorial empires (Schiebinger, 2005, p.52). We recognize that 'colonial science' should also be seen as a kind of specifically colonial knowledge, both in the way it was constituted and as a discourse that conceptualized European dominion and molded the subjectivity of colonized peoples (Bonneuil, 2000, p.260).

² For an appraisal of Portuguese colonial historiography relating to the twentieth century, see Pimenta, 2010, p.143-166.

³ It has become a convention to call the African Empire of Portugal the third Portuguese colonial empire, between 1825 and 1975, since it succeeded the second empire – that of the plantations and mines in Brazil – which itself succeeded the commercial empire of the Orient (see Clarence-Smith, 1990, p.9-10). Alongside its colonies in Africa (Angola, Cape Verde, Guinea, Mozambique and São Tomé and Príncipe), this third empire also included Goa, Damão and Diu in India (until 1961), Macau and Timor.

⁴ After the constitutional review of the Portuguese Republic in 1951, which replaced the words 'Empire' and 'Colonies' with 'Overseas' and 'Overseas Provinces', the Ministry for the Colonies adopted a new designation. The bodies under its auspices had to do likewise, as their constitutive laws were reviewed. In the case of the Board, the change from 'Colonies' to 'Overseas' appears for the first time in decree 40.070 (Portugal, 24 fev. 1955, p.145). However, it had started being used unofficially in January 1952. With the restructuring of November 6th, 1973, taking effect as of January 1974, the Board was renamed Board for Overseas Scientific Research (Junta de Investigações Científicas do Ultramar, Jicu) and lasted until 1979 (Portugal, 6 Nov. 1973, p.2106-2118).

⁵ A conservative, catholic, colonialist dictatorship that held power in Portugal from 1933 to 1974. It emerged after a coup d'état on May 28th, 1926, which toppled the First Republic. After the suppression of political liberties, censorship and political police were brought in. Until 1968, it was headed by António de Oliveira Salazar, President of the Council of Ministers, who was succeeded by Marcelo Caetano.

⁶ In this and other citations of texts from non-English languages, a free translation has been provided.

⁷ 1936 is also the year in which other founding entities of the Portuguese scientific system were created: the National Board of Education, the National Agronomy Station and the Central Chemistry Laboratory.

⁸ This inquiry yielded three tomes published in 1938, the creation of the Colonial Research Fund in 1940 and the consolidation of a network of research institutes in British East Africa. For a thorough, in-depth analysis of the history of the African Research Survey, see Tilley, 2003.

⁹ The British ultimatum of 1890, which had frustrated Portugal's plans to extend its sovereignty from the Atlantic coast of Angola to the Mozambican coast and contributed decisively to the sacralization of the empire; Portugal's joining the First World War, based largely on its wish to defend its colonies; Belgium's pretensions towards Cabinda and the pretensions of the South African Union towards the south of Mozambique and the port of Lourenço Marques – pretensions expressed explicitly during the Peace Conference. These facts contributed to heighten Portugal's sense of vulnerability. As Alexandre (2000, p.216) shows, "the main impulse of imperial nationalist ideology comes primarily from the phantom of foreign threats, triggered by the instability of the system of nations molded by the Versailles Treaty."

¹⁰ In line with what Bacelar Bebião hailed: "common sense advises one to start out with caution, restricting one's work to the branches of natural history, leaving until later ... linguistic, historical and other studies ... As a consequence, in the 'research plan' presented below, reference is only made to the branches of geography, botany, zoology, anthropology and ethnology" (Portugal, 1945, p.27).

¹¹ Expression used by Bonneuil (1990, p.83).

¹² Black individuals or their descendants born in the colonies, who did not share the "knowledge and habits" of 'civilized' people; as against white 'citizens' or their descendants (on the 1926 Statute of Indigenous Peoples, see Neto, 2010, p.217).

¹³ Meanwhile, the uprising and subsequent massacre in Batepá, São Tomé, was caused by the pressure of an urban development and modernization plan pushed through by governor Gorgulho using a limited workforce that penalized the 'freedmen' (Seibert, 1997).

¹⁴ In 1945, the Industrial Development and Reorganization Law passed down the guiding principles for the country's new industrial policy. With its development plans, the Estado Novo was introducing a policy to develop the nation's economy. The First Development Plan (1953-1958) focused on infrastructure (electricity, transportation and communications); the Second Development Plan (1959-1964) prioritized basic manufacturing; the Mid-term Development Plan (1965-1967) focused on industrialization for agriculture and defended industrial output for export purposes. For more on Portugal's development policies under Salazar, see Rosas, 2000.

¹⁵ Only medicine was intentionally left out of its scope because there was an institution devoted specifically to teaching and studying tropical medicine, the School of Tropical Medicine, created in 1902 (Institute of Tropical Medicine from 1935 on).

¹⁶ We have yet to investigate the evolution of the Board's budgets. In 1940, the budget for its missions was 3,700,000 *escudos* and in 1950 it was 20,000,000 *escudos* (cf. Correia, 1950, p.530-534). "In 1967, the Executive Commission of the Board received a budget of 11,257 *contos*, of which just 5,093 *contos*, or 45.2 percent, came from the General State Budget. The entities under the Board received a budget of 102,067 *contos*, of which just 8,289 *contos*, or 8.1 percent, came from the General State Budget. Together, the Executive Commission and the Board's entities received financing of 113,324 *contos* in 1970, of which just 13,382 *contos*, or 11.8 percent, came from the General State Budget. From the Overseas Provinces budgets, the largest portion came from Angola (72443 *contos* and 63.9 percent) and Mozambique (22,813 *contos* and 20.1 percent), summing 95,256 *contos*, or 84 percent" (Silva, 1974, p.24).

¹⁷ On the rise of the idea of development in Africa during the colonial and post-colonial period, see Bonneuil, 2000, Cooper, Packard, 1997; Hodge, 2007.

¹⁸ According to Carlos Krus Abecasis, state under-secretary for Overseas Development (1955-1960), "we will strive to ensure that economic development [with concomitant progressive integration of subsistence economies in market economies] is systematically juxtaposed against the integration of indigenous masses in the spiritual community of the Nation. That is why it is so important for us to intensify white settlement, even and perhaps primarily in rural areas. Without it, a fully integrated multi-racial community, which is the ultimate goal of Portuguese work overseas, will not come about - and the great national mission would have failed" (JIU, 1959, p.XII).

¹⁹ Studies of agricultural ecology designed to draw up maps of arable land, define land use capacities and devise plans to harness it; biology research designed to establish scientific methods for growing crops and improving plants of economic interest and their protection; fertility and water saving studies designed to interpret and use soil maps and establish the bases for experiments in agricultural practices; studies of methods for cultivating the land, breeding cattle, using natural biological resources and agrarian structures of primitive or evolved human communities in order to investigate the relationships between ecology and rural landscape and derive from it the lessons needed for planning land use (Portugal, 23 jan. 1960, p.72-73; also see Silva, 1965, p.151).

²⁰ These bodies succeeded the Center for Fishing Biology and the Marine Biology Mission (of 1959).

²¹ This refers to Portugal's participation in international technical and scientific cooperation entities on different aspects of colonialism having started half a century earlier, for instance, with the International Colonial Institute, created in 1894 and transformed in 1949 into the International Institute of Differing Civilizations (Incidi).

²² On this paradigm shift from physical anthropology to ethnology and its new appreciation as a social science and applied colonial science, see Pereira, jun.2004-jul.2005, p.326-331.

²³ Secret movements, ethnic minorities and religious movements were seen with mistrust and apprehension for the "subversive" influence they could have on the indigenous population. These phenomena and communities must be known about and comprehended to be able to control them and prevent them from harming "the common good and the national interest" (Rego, 12 out. 1961).

²⁴ As Rui Pereira says, such was the case of Jorge Dias, head of the Study Mission of Ethnic Minorities in the Portuguese Overseas (created in 1957). He diagnosed the situation and pointed out the roots of the social, economic and political malaise. "But, leaving behind the very objectives of an Applied Anthropology – which revealed MEMEUP's plans ", Jorge Dias came to propose corrective measures and preventive provisions, so blatant was the discrimination, exploitation and obscurantism, if set against the ideals inscribed in the Portuguese colonial model" (Pereira, 2006, p.457; in the subsequent pages he presents Jorge Dias's corrective and preventive proposals).

²⁵ As of the 1960's and under the encouragement of the OECD, it became common to use the percentage of GDP devoted to research and development as a key indicator of a country's strength, as well as the number of scientists and engineers available to undertake such research and bring it into line with the States' national and international agendas (Krige; Barth, 2006, p.2).

²⁶ The Board's four bodies devoted to the social sciences were closed down (Center for Political and Social Studies, Center for Social Services and Community Development, the Study Mission of National Income from Overseas and the Planning Commission for Scientific and Technological Research). Contradicting the report by the Overseas Council in October 1970: "In overseas provinces, the most strongly developed sectors must be those that correspond to the branches of knowledge concerning ecology and the human sciences in general. The preservation of the environment and the delicate balance between individual and society that the shock of cultures and the impact produced by the introduction of new technologies constantly threaten, in fact demand of them, special importance and relief" (cited in Silva, 1974, p.86). And Silva (p.97) states: "it is clear what the Board intended by extinguishing its research bodies working in the social sciences, whose intensification is a precondition for articulating scientific and technological activities with the requirements of social and economic development."

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