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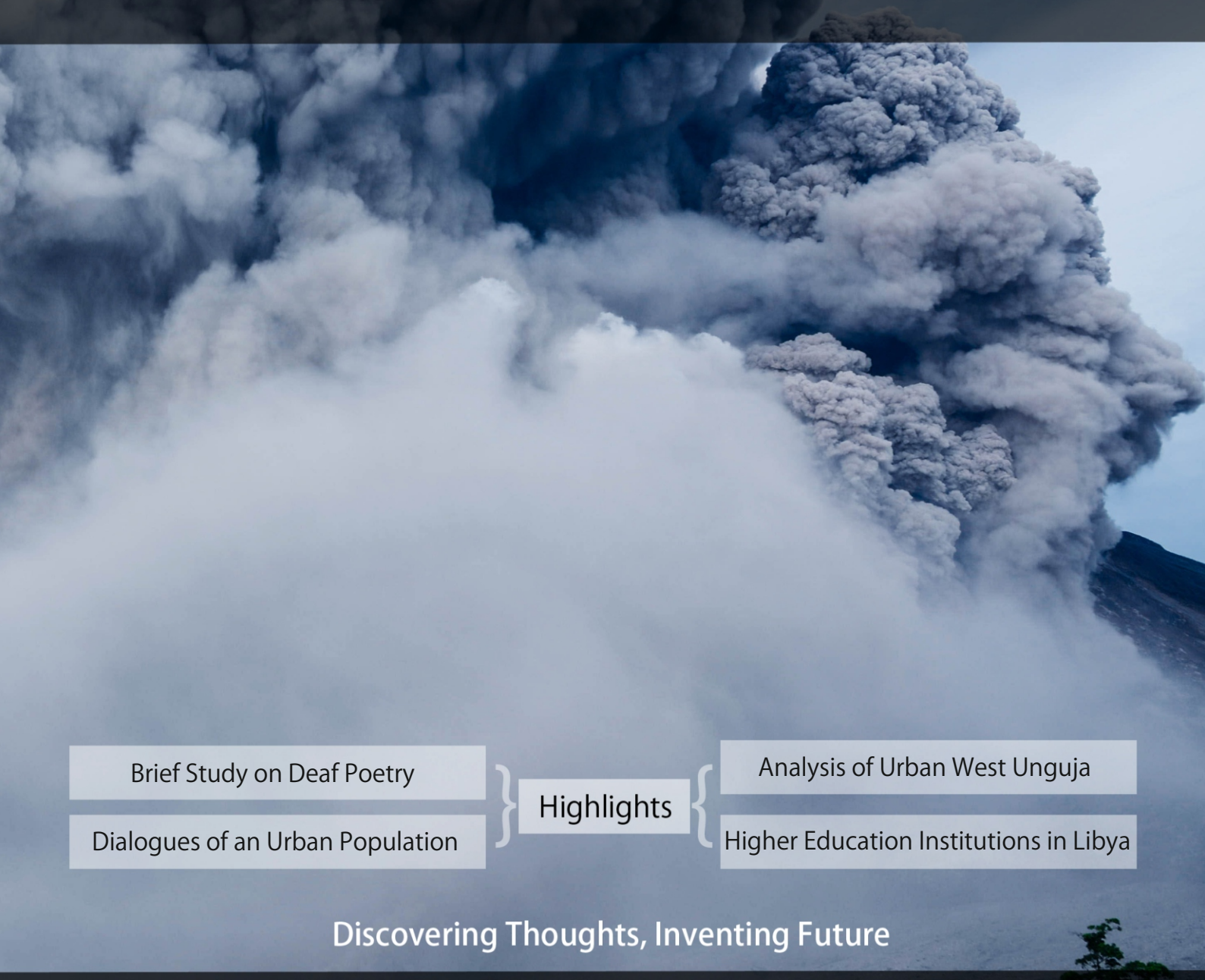

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Highlights

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Discovering Thoughts, Inventing Future

VOLUME 22 ISSUE 1 VERSION 1.0

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Dialogues of an Urban Population with the Presence of Solid Waste thrown in the Open Air

By João Batista Alves & Miguel Luiz Contani
Universidade Federal de Campina Grande (UFCG)

Abstract- Solid waste treatment is an everyday, complex, and challenging issue. For this reason, it becomes a permanent research theme and generates a specific vocabulary. This study aims to clarify how an urban community deals with the domestic, organic, and non-organic waste and other undesirable or unpleasant materials in landfills, sidewalks, and streets. The research is of analytical, bibliographical, and field type, with data collected through structured and semi-structured questions, asked to people living around vacant land with large garbage dumps. The analyses are based on principles of environmental education. It becomes evident that the population copes with the phenomenon, although not adequately understanding the cycle of waste materials, their treatment, and their effects on the health. The lack of solution uses to be associated to the lack of punishment. On the other hand, the cultural habit of throwing garbage in the vicinity of the houses, is rooted in childhood.

Keywords: *garbage. dialogue. environmental education. perception. vocabulary.*

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Dialogues of an Urban Population with the Presence of Solid Waste thrown in the Open Air

João Batista Alves [α] & Miguel Luiz Contani [σ]

Abstract- Solid waste treatment is an everyday, complex, and challenging issue. For this reason, it becomes a permanent research theme and generates a specific vocabulary. This study aims to clarify how an urban community deals with the domestic, organic, and non-organic waste and other undesirable or unpleasant materials in landfills, sidewalks, and streets. The research is of analytical, bibliographical, and field type, with data collected through structured and semi-structured questions, asked to people living around vacant land with large garbage dumps. The analyses are based on principles of environmental education. It becomes evident that the population copes with the phenomenon, although not adequately understanding the cycle of waste materials, their treatment, and their effects on the health. The lack of solution uses to be associated to the lack of punishment. On the other hand, the cultural habit of throwing garbage in the vicinity of the houses, is rooted in childhood. It can be inferred that "people look, but do not see" because of an automatic and embedded view of the landscape. This automation needs to be "shaken", for higher consciousness towards solution. A vocabulary with the potential of improving perception is generated.

Keywords: garbage. dialogue. environmental education. perception. vocabulary.

I. Introduction

The concept of garbage is controversial and, "from a semantic point of view", is considered everything that is " useless", " to be thrown away", "to get rid of". The meaning of garbage in different languages is that of an “unbearable substance" (WALDMAN, 2010, p. 17). In contemporary times, garbage is a prominent issue in urban territoriality, involving a whole infrastructure of support (collection and disposal) in view of the ever-increasing waste production. In a number of Third World cities, the government’s "emblematic disregard” for the garbage dumps, which are areas of indiscriminate disposal, soon to be appropriated by "waves of poor immigrants" (WALDMAN, 2010, p. 17-18).

Attention is required to the fact that insufficient efforts in socio-educational programs are creating new territories, undesirable or segregated, tending to promote ecologically unequal exchange between regions and countries, as evidenced by their crowded cities. On the other hand, household waste deposits, which tend to be located further and further away in the urban space, have the potential to become a source of economic activity for the benefit of the poorest who collect items thrown away.

Despite the advance in the perception of solid waste as economic value, the unbalance factors in the urban environment need to be seriously appraised, especially in terms of consequences in the deterioration of living conditions, basically affecting the excluded groups, which tend to ignore the risks and vulnerabilities they become involved with. This means the landscape of the city and the levels of interaction it produces.

This study was carried out under the Doctoral Program in Environment and Development of the Federal University of Paraná - Brazil, and was presented as a research report during the 2017 Conference of the International Association for Dialogue Analysis (IADA), held at the University of Bologna - Italy, with theme "Dialogue, interaction and culture: multidisciplinary perspectives in the use of language in daily life." As a first result, the purpose of integrating environmental education and urban dialogues in the perspective of learning and social change was achieved.

The research has moved forward, and now the scope of solid waste in terms of its cycle, treatment, and health consequences, begins to be treated as a permanent scientific subject. The sparking problem began to incorporate this question: How would the city population rate the living with solid waste, and what meanings come out of this answer, that could be used in benefit of a process of environmental education?

The assumption that this research decision can contribute to enhance the understanding of dialogue as part of a wider educational action is added to the perception that a specific vocabulary will be formed. When treated as elements of language and sense production, these elements tend to enhance the competencies needed to find ways to teach and educate on urban themes in the field of environmental education.

Another assumption is that this assessment allows to understand the meaning of changes in space and time, as well as the ways of observing the old and modern dimensions, movable and immovable, living and non-living in the city space. It should also be stated that there is a cultural behavior in the act of burning solid

Author α: Ph.D in Environment and Development, professor at the Department of Forest Engineering at Universidade Federal de Campina Grande (UFCG) - Brazil. Author of the book A face oculta do lixo (The hidden face of garbage). e-mail: alvesjb@uol.com.br

Author σ: Ph.D in Communication and Semiotics, professor at the Department of Communication at Universidade Estadual de Londrina (UEL) - Brazil. e-mail: mcontani@gmail.com

waste in the vicinity of homes, with its roots linked to experiences in childhood times: what is natural for the father becomes natural for the son. Waste management today is a demand associated with territoriality.

The goal is to associate information about the way garbage in the city is viewed by the population, with dialogue, search in documents, field visits, in order to provide meaningful inputs for environmental education. The specific objectives are:

- To find indications offered by the statements and documents consulted about the waste disposal phenomenon and the knowledge associated with it.
- Describe each fact and its importance in the constitution of a vocabulary to be incorporated in dialogue.
- Analyze the potential alternatives regarding urban development and ways to improve learning strategies and persuasion.

Data were collected in various circumstances, in the period of two years, by using questionnaires with structured and semi-structured questions, answered by people living around the most critical areas. Contacts with authorities and social organizations of the community have also been carried out.

The discussion begins with the characterization of solid waste in its multiple aspects, then the research data are presented and the verbal outputs in the composition of a vocabulary are illustrated.

II. Solid Waste and Territory

Among the great challenges of today's society with regards to the negative effects arising from the fast appropriation of the natural environment, in contemporary society, by a hegemonic system, which is based on the intense consumption of natural and artificial goods, is the problem of solid waste, as stated by Sauer; Seger (2012). Dorst (1973), Figueiredo (1994) and Waldman (2010), contend that the severity of the problem is at the same time based on the long-standing coexistence between human beings and waste. The generation of waste is an indiscernible content of the human history, spreading through the inhabited space and the landscape, since both integrate the process of transformation of natural resources (WALDMAN 2010, p. 11). In 2012, the World Bank produced a report on urban solid waste and mentioned:

> Ten years ago, there were 2.9 billion urban residents who generated about 0.64 kg of MSW per person per day (0.68 billion tons per year). This report estimates that today these amounts have increased to about 3 billion residents generating 1.2 kg per person per day (1.3 billion tons per year). By 2025 this will likely increase to 4.3 billion urban residents generating about 1.42 kg/capita/day of municipal solid waste (2.2 billion tons per year). (WORLD BANK, 2012, p 101)

This information became available only from official data collected by governments on urban solid waste. Many communities live on the edge of dumps, toxic waste dumps and, in a countless number of cities, garbage is scattered on the streets, sidewalks and vacant land (wastelands). In this sense, the publication United Nations-Habitat (2006) reported on this same problem in several cities of the world, which is corroborated by authors such as: Joseph (2002); Bonfanti (2004); Reyes (2004); Chiemchaisri, et al. (2007); Yalan, L. et al. (2008); Abul, S. (2010); Bandara (2010); Jalil (2010); Fazzo, L; Santis, M; Mitis, F. et al. (2011); Mudzengerere, F. H.; Chigwenya, A. (2012); kubanza; Simatele (2019).

According to Veloso (2008, p.1954), waste is described, both as something unpleasant and something feared, because it carries the remains, the unwanted leftover of the production process and because it is "associated with the elimination of pathogenic microorganisms conveyed by the body fluids and waste as well as the disposal of atomic, radioactive and industrial pollutant residues". The author adds that the remains began to cause fear to man "from the moment they were associated with their physical and psychic suffering" (VELOSO, 2008, p.1954).

Jacobi (2012, p.31) indicates that to "reflect on urban solid waste, it is necessary to take into account spatial, environmental, health, social, cultural and institutional aspects". Waldman (2010) explains that, in different cultural contexts, there are different ways of perceiving waste and its management. Garbage, for example, can be seen and perceived as economic source as Kligerman (2000, p.100) proclaims, when associating increased knowledge about garbage with an increase in environmental awareness. The term garbage is then requalified with the designation solid waste, not as a degradation problem, but understood as "[...] ' objects' with added economic value, because they enable (and stimulate) reuse in the production process itself".

In the same sense, Figueiredo (1994) argues that the current treatment given to the issue of waste differs in the various societies of the world, so that the policies adopted are tied to regional characteristics and peculiarities, cultural factors, and perception of reality by each people. However, despite this advance in the perception of garbage endowed with economic value, in modern society, it is a factor of unbalance in the urban environment and "a factor of even greater deterioration of the living conditions of excluded groups, largely unprotected and ignoring the ills of cohabitation with junk", because they occupy the peripheries, precisely where the garbage is normally brought. (WALDMAN, 2010, p. 62).

Rodrigues (1988) highlights the problem of garbage in contemporaneity, as responsible for the emergence of new undesirable or segregated territories; that is, areas where the most diverse types of waste are left, promoting ecologically unequal exchange, which occurs between regions, countries, federative units. It can occur even in a city, "as is the case with household waste dumps, which must always be situated further away and which have helped the survival of the poorest who collect the remains." (RODRIGUES, 1988, p. 79).

The issue of pollution and its socio-environmental consequences is one of the most debated, as it involves a complex chain of cause-and-effect events. Figueiredo (1994) mentions, among the aggravating factors, the increasing participation of the artificialization of materials and toxic loads in garbage. Waldman (2010) warns that such problems occur and get intensified because these residues aggregate several substances that will potentiate the impacts of both in the population and in the natural environment. Among them, the author highlights: paints, varnishes, pesticides, herbicides, repellents, pharmaceuticals, brake and transmission fluids, cosmetics and beauty products, batteries, cleaning products, thermometers, aerosol bottles, fluorescent lamps, etc.

Although in Brazil it represents only 1% of the household solid waste – (world average), this amount is within a vast volume of debris, aggravated by the long-term impacts they can cause. In addition, such residues change into substances that are contained in the released gases and percolated slurry. Beside dioxin and plutonium, slurry makes up the "three most dangerous substances produced by man" (WALDMAN, 2010, p.107).

Special attention should be paid to dioxins which, added to another substance with enormous harmful potential, furans, in addition to their toxic potential, involve enormous costs for the problems caused by them, and it is estimated that the cost of production, in reals, per ton of dioxins and furans reaches the house of the trillion. This is the commitment, in terms of costs, resulting from the problems caused by dioxins and furans (BOLOGNESI, 2012). These and other related aspects determine the constant concern with the risks of uncontrollable waste production.

Environmental impacts caused by solid waste have continuously increased by "product artificialization". This expression refers to the presence of slow absorption substances, most often chemicals, little or nothing acquainted by the population. They are materials that continue for a long time without degrading, as is the case with plastics, new polymers (polyethylene polyvinyl chloride, polypropylene, etc.) and radioactive elements such as plutonium, among others. The same is the case with heavy metals such as copper, mercury and lead accumulated in production chains, later absorbed by plants and animals.

III. Methodology

Data were collected in the city of Fazenda Rio Grande (FRG), Metropolitan Region of Curitiba-PR. The municipality is located in an urban area of 42.55 km^2 and 78.05 km^2 of rural area, totaling 120.60 km^2. The altitude of the city is 910m, with average temperature ranging from 12.6o C to 23.2o C, humid subtropical climate, mesothermal, cool summers and winters with frequent frosts. The average relative humidity is 82%. (COMEC, 2006). According to the Administration of Fazenda Rio Grande (2011), the municipal human development index (HDI-M), 0.763; classification of the municipality in Paraná, 112; national classification of the municipality, 1,503.

According to IBGE – Brazilian Institute of Geography and Statistics (2010), the population is 81,675 inhabitants. As for garbage collection, there is no information from this source. The Department of Environment reported that the approximate daily average collection is 44.5 t/day, making a generation of 0.545 kg/inhabitant/day, which corresponds to an average well below those collected by the country, state of Paraná and city of Curitiba.

In order to check the causes of so much garbage on the streets, as well as the relationships that settled between society and waste, interviews were conducted from a questionnaire with semi-structured and open questions, in a total of 47 questions. Conducted in a dialogued way, they covered several aspects, from the interviewee's profile, living in Fazenda Rio Grande, quality of life, the issue of vectors, diseases, and the problem of garbage. For initial interpretation of the data, the category analysis was *applied, according* to Campenhoud and Quivy (2011)

A first set of questions was raised in order to verify whether the interviewees perceived the existence of any risk and/or danger near their homes, without addressing the theme of waste. The most common answers, and a minority that knew how to give some answer, was regarding public safety conditions, such as the incidence of robberies, thefts, delinquency, among other occurrences of crime. Very few people remembered to mention the nearby waste, deposited on land, streets, and sidewalks of the city.

The next question was designed to know if the interviewees had garbage as a problem in the city, and 72.7% said yes, 26.5% said no and 0.8% said they did not know. Regarding the mobilization of the population to solve the problem, 59.1% think that there is no mobilization of the population to solve the problem, 34.1% said there is mobilization and 6.8% did not know how to respond. In another question 90.9% find it unacceptable to throw garbage on the street, however when asked if they had already thrown garbage on the street, 50% said yes; another 50% answered no. On the other hand, 95.5% said they saw several people throw

garbage at stake. They blame all people for the situation, except themselves. They refer the reason for the situation to: lack of consciousness 15.2%; more than one reason cited 10.6%, there is no trash 9.8%; people laziness or disregard 9.1%; cultural question 4.5%; negligence or carelessness 3.8%; lack of hygiene 3%; lack of commitment 2.3%, and other responses and do not know, add up to 23.5%.

The interviewees were asked to express their opinions about why so much garbage is generated in the current circumstance experienced in FRG, and the ratio of size volume. 30.3% of the interviewees could not answer, while 22.7% gave generalized, superficial answers as in the phrase – lack of whimsy or lack of collection. Those who gave answers in a more accurate sense, composed the following percentage: largest population, 12.9%; more than one reason, 7.6%; consumerism and lack of recycling, both with 9% of the answers; lots of packaging, 3.8% and lots of purchase, 2.3%. The other answers that totaled 2.4% were: lack of responsibility, too much disposable and waste.

People have been asked how they felt when they saw the garbage strewn across the streets. Even in possible contradiction with their own acts, 20.5% of the interviewees answered poor hygiene, and attributed the terms bad/ugly/dislike. Also highlighted was the 13.5% who considered indignation and discomfort, and 12.1 said they felt sad and distressed.

The interviewees were asked what they thought of the vacant lots in the city. The answers and their respective percentages, were: presence of residues and scrublands, 24.2% (figure 1); need for cleaning and care, 18.2%; sense of denial in general, 15.9% and, despite one of the lowest percentages, it is noteworthy that 6.1% remembered that these places turned into shelter for delinquents and drug users. In this sense, we also tried to understand whether people remembered what kind of waste was disposed in the wastelands, and in this regard, the highlight of the answers by percentages, was: furniture, 18.4%; household waste 18.0%; rubble 16.5%; miscellaneous, 12.4%.

Source: João Batista Alves

Figure 1: Area contaminated with different types of garbage and burning of remains

On the problems that wasteland with garbage could bring to the population, the answers highlighted with their respective percentages were: 44.7% cited more than one problem; diseases/health, 24.2%; vectors, 12.9%. Also, important to add the 2.3% who mentioned the presence of drug users in these lands.

When asked about who is to blame for the garbage on the land: 43.2% attribute it to the neighbors, 22% to the population in general, 10.6% cited more than one problem, besides blaming people from outside and the waste pickers (*carrinheiros*), who when collecting garbage, tear the bags, throw on the streets or land what they are not interested in. For some of the interviewees, the electronic waste found on the land and even on the streets is, in some part, discarding stolen products. They remove what is of interest in the appliances, and the carcasses with remains of non-usable materials are disposed. There is also disposal of this type of material by small repair shops.

When asked about the reasons why the waste was deposited there, the main arguments (higher percentages), for each of the garbage typifications established by the research, were: lack of awareness and responsibility 28.7%; sloppiness/carelessness [...], 19.8%; have no place to place or collect, ranging from 16.9 to 31.1% of the answers. The mention of laziness with 16.8% is also highlighted.

In the matter of plant materials, loggers from pruning branches, trees and grass, the public manager, through the concessionaire that operates in garbage

collection, does not have enough staff to meet the city's demand. Complaints due to the lack of collection of this type of waste, even if requested, are widespread. Also, no waste is collected such as polystyrene parts, furniture, and household appliances such as sofas, mattresses, etc. Therefore, a stalemate occurs between the community, the public manager and the garbage collection concessionaire, and everyone loses. According to 50% of respondents, the responsibility for cleaning the land with waste is the owners, 16.7% the city and, only 3%, the neighborhood, which are those who deposit garbage.

Despite being aware that garbage on the land can cause a number of problems for residents to avoid themselves, blaming the rest of the population for the problem, and 89.4% say they believe it is possible to solve the problem of waste in FRG, 67.4% said they have done nothing so far to participate in solving such a problem. However, 32.6% said they had already done something, but the actions they did were only to solve the immediate problems that were causing them discomfort, with little reference to actions that would go to the heart of the problem. The actions come from a minority and are only reactive.

In this regard, two other questions were launched. First, why they haven't done anything so far and, second, what would motivate them to do something. For the first question, 32.6% said they had taken some action, among them, complaints, contact with owner, cleaned the site on their own, etc. 12.1% do not feel responsible; 12.1% generalized responses, out of context (other); 6.8% the problem has not yet troubled them; 4.5% are afraid of conflicts with neighbors or owners; 3% said they have no one to turn to; 2.3% think they have nothing to do and 0.8% said, for both situations, for convenience and for not having had the opportunity. Finally, 25% said they would not answer the question.

For the second question about what would encourage them to do something in the future, the answers were: 22% if they felt uncomfortable by the presence of garbage; 16.7% would not motivate them; 14.4% gave generalized responses; 12.1% said they felt uncomfortable without specifying; 11.4% for a more organized and clean city; 6.1% for the presence of vectors; 5.3% by the presence of delinquents; 4.5% for better quality of life; 3% as an educational measure and 4.5% did not respond. From the answers given, the action, in general, would only come if people felt uncomfortable about aspects that would directly impact them.

Those who answered that there would be solutions to the problems of garbage in the city (89.4%), were asked to suggest the measures that should be taken. The answers, with their respective percentages were punitive measures (fine), 25.4%; education/ awareness, 12.4%; improve the services of collection and distribution of garbage cans, 10.7%, and cleaning of lots, 10.2%. This confirms the fact that, for common sense, punitive measures are the most effective to prevent transgressions of laws and social norms. However, some of the interviewees are already beginning to realize that socio-educational practices and citizen awareness campaigns are also appropriate solutions. Rodrigues (1998) mentions, for example, the importance and positive effects of selective collection campaigns as an option to solve some of the problems related to garbage.

It is believed, however, that the issue of education will take on greater weight in the future of the process, judging by the positioning of the interviewees when asked to describe the garbage cycle in the slightest: it was expected that at least they would describe that the waste originated in the purchases of products and services that are consumed, are collected, transported and deposited in dumps and landfills (the latter very familiar to all in FRG, because the municipality hosts one of them, most people see it as a dump). However, 78.6% could not describe the minimum cycle and 21.4% were able to make only partial reference without tying to the conclusions.

In FRG, the process of collecting household waste was done twice a week in all neighborhoods and, from 2012, it became three times a week, in almost all neighborhoods. Selective collection is done once a week, and 81.1% said they make separation; 13.6% no; 5.3% sometimes do the separation. However, the data and discussions conducted so far show flaws in this process. Selective collection also leaves much to be desired, complaints about this practice were generalized during the interviews. It was found on site, during the fieldwork, that such failures exist and were admitted even by the city mayor during the interview he granted for this research. In reality, it seems more like "a make-believe" in separation and collection than properly a cultivated and well-installed habit. The separation was questioned, and 57.6% said it was recycled from the unrecycled; 21.2% dry from the wet and 6.1% make separation into fractions, ranging from 3 to 4. As already mentioned, 13.6% do not; other answers and did not answer 0.8% for each one.

According to the interviewees, they produce daily, on average, 0.9kg of waste/day. Then, a question arises: if the city records an average collection of 0.54kg/inhabitant/day, and they cite an average of 0.9, where is the difference going? People may have overestimated their garbage production, but one fact that can be inferred is that part of that difference is going to sidewalks, streets, vacant land, and riverbanks. Within the process of garbage separation, another concern was the destination of toxic waste such as batteries, and fluorescent lamps. Due to its characteristic, this type of waste has both environmental importance, due to the propensity to produce

contaminations in the population that can be directly and indirectly affected by this type of waste, as the labor, because it affects workers who collect garbage, and waste pickers. In this question, 37.1% said that this type of garbage went to the ordinary garbage, 38.6% said it went to recycled waste, 2.3% direct to waste pickers, 5.3% gave evasive responses that were classified as others, and 0.8% did not respond.

When trying to investigate with the association of FRG waste pickers, where all selective waste should be sent, it was found that only a small part of these residues are actually received by the association, and under the conditions cited by the interviewees - inside milk cartons or other containers. However, the volume is not so large, which means that it is either going to the common garbage in larger quantity than was reported, or is going to stop on the vacant land or city streets, inside the boxes, and was not detected by the survey, because no milk boxes were opened to check the contents.

There is also a type of waste that has environmental importance, especially because of the impact it can produce by the pollution of water resources: it is the cooking oil used. According to 26.5% of respondents, used oil is passed on to other people to make soap; 21.2% throw in the sink and go to the common sewer, 16.7% throw in the land, 15.9% make soap at home, 7.6% use little and do not spare, 6.8% give other destinations, 3.8% throw in the common garbage and 1.5% did not know how to answer. As observed, 37.9% still do not give a correct destination for this type of residue, which denotes the need for educational actions – another item to be included in the campaigns that, because they are being diffusely conveyed by the media, have not had the necessary effects.

As another essential item regarding the relationships established between the population and waste disposed in inappropriate places, we sought to know how the parents of the interviewees dealt with the waste. The purpose was to create a condition of rescuing, through the report, the learning process that the interviewee went through since his childhood. The guiding principle is that in children, much of what is learned stays for life, and their own educational process mirrors how the educational process of parents was. In the form, the deal with household waste can reflect cultural aspects, installed from habits acquired in the past. This type of relationship is visible among the data already commented on as the occurrence of waste fires throughout the city – 1,264 points were observed (Figure 2). Throwing cooking oil in the sink or use it to produce soap, are practices that come from traditional habits and customs, especially from people who came from the countryside.

According to 23.1% of the interviewees, the garbage, in their homes of origin, was spread throughout the backyards; 20.7% remember their parents' habit of burning the waste; 11.8% buried; 14.2% sent it to the common collection; 9.5% used the waste with organic fertilizer; 4.7% gave other destinations; 1.8% sent it to selective collection and 14.2% did not. Two curiosities stand out:1) most of the reports that the garbage was scattered, burned, or buried, was from people from the countryside; 2) those who answered that they destined garbage for the common collection were residents who, in childhood, already lived in the city. Those who said that selective collection was already done, had spent their childhood in Curitiba, where selective collection was a practice that was carried out since 1989.

Source: Alves

Figure 2: Burning garbage in a place that should be a sidewalk

This situation can be understood from the statement of Linton (1981), that throughout society, on average, individuals are passive in receiving and fixing the culture instituted, which they experience and transmit to their descendants without many changes. This author argues that the physical structure together with instinctive behavior are biologically inherited, while the behavior one learns is partly socially inherited

(theory of unconditioned and conditioned reflexes). Martins (2009) refers to the way Piaget handled this issue, seeing it as a servomechanism, a homeostatic ring endowed with feedback. In the cognitive act, the responsiveness being fundamental, Piaget called it a competence that provides an uninterrupted sequence of learning. This competence was called the "process factor", present in the act of learning.

IV. Discussion of Results

The data collected were obtained by a set of spontaneous manifestations, involving elements of an objective and subjective nature, integrated to this point, that it becomes difficult, sometimes, to separate one dimension from the other. The mapping obtained means a multiplicity of conclusions to be linked to environmental education.

From the data collected, it can be inferred that the population perceives the discomfort caused by solid waste improperly disposed, in general. However, it does not feel responsible for the state in which these open spaces are located, nor does it know in depth the causes and consequences of solid waste being deposited there. Recognizes that the city has problems with waste; superficially recognizes that the garbage scattered throughout the city, especially that deposited in the vacant land (wastelands), bring problems motivated by disease-causing vectors. On the other hand, it recognizes only on the other the blame for the problem, and exempts itself from responsibility.

There is a culture of throwing garbage on the sidewalks, streets, and wastelands of the city and, in everyday life, people live with this process, because they react timidly in the search for solutions. Such solutions are purely reactive in nature. The cultural habit may have a contribution of the learning process with the parents of the majority of respondents who lived in the rural area and/or small towns with the characteristics, whose size was to throw garbage around the residences, often burning and/or burying it. There is evidence of a habit acquired in this process.

The interviewees demonstrated no being fully aware of the problem, given 1) not knowing how to specify what types of disease can be transmitted, the relationship between the distance from the garbage focus and these problems; 2) not understanding in the minimum cycle of garbage, as well as the potential contribution of garbage burning to aggravate such problems. Another issue was also the correlation between these garbage focuses and psychological diseases, such as anxiety and depression. Also, few correlated the problem with overconsumption.

With the improved understanding of the phenomenon, there is the possibility of playing an active role in the action of making it more favorable. The knowledge generated will be recorded and must return in a relevant way, to continue to be expanded, and so that it can be used without loss or rewind. The records need to be found and must be found which is relevant. The attitude of understanding meanings is therefore fundamental. The representation stage is the melting point for information to process itself as a generator of knowledge and thus be transformed. The conviction is towards developing methodologies of access and analysis, as well as knowing how to identify and size them when they are already part of a document.

The risks for public health related to the issue of garbage are the consequence of a number of factors that interact with each other and encompass environmental, occupational and consumer aspects. The illustration contained in Figure 3 was obtained from a quantification of incidence in the speech of the informants of the research and in the conceptual foundation offered by the authors mentioned. The image shows the cloud format of words, in which the ones with the highest incidence have the highest proportion within the drawing. A condition of contact with a typical vocabulary for the representation of knowledge is produced. Rescuing each term and thinking about the fit given to it in the set of observations, is a factor of perception.

Source: Own elaboration

Figure 3: Solid waste treatment vocabulary

The fundamental association between garbage and problem is evidenced. A care to be taken is to avoid exclusive blame to garbage when it is already deposited, or to adopt avoidant postures in the discussion. Garbage is inevitable and is generated daily, at all times in every human operation; result in leftovers to be discarded, also constantly. For this reason, what should be sought is to adopt a "permanent research posture" in order to refine perceptions and conclusions in order to, in whatever the local, "find ways to isolate factors causing *psychosocio-environmental problems* (...), make comparations, establish inferences about the alignment of social statements and the conditions for a differentiated urbanization. (ALVES, 2017, p.99)

Most of them are far from being able to understand and dimension the fact that part of all these problems stems from the industrial model that imposes a programmed obsolescence process for the items produced self-sustaining from an unbreakable cycle of production and consumption. They refer to the solution of the problems, to the end of the production chain, which is the treatment and final disposal of waste, forgetting that actions must take place in the context of rethinking the economic model, balancing consumption, reusing products for another purpose, after fulfilling their main function; recycle what really can no longer be used.

In this direction, Linton (1981) stressed that, under normal conditions and in all societies, ordinary individuals are unaware of what members of their own group establish in terms of interests and judgments. In this sense it ends up following the established cultural patterns, its meanings and dimensions. Berger and Luckmann (1991, p. 56) point out that everyday life "is dominated by the pragmatic motive recipe knowledge, that is, knowledge limited to pragmatic competence in routine performances, occupies a prominent place in the social stock of knowledge." That is, people only retain what interests them in everyday life, which is part of their daily lives and that provides them with ways to solve their common problems, not having an interest in going beyond them. Such a proposition may explain why there is a lack of interest and deeper knowledge of the various issues raised on the issue of solid waste and the risks involved.

On the issue of risks and vulnerabilities, it is clear that the entire FRG population is at risk, which may be caused by the presence of vectors, as well as waste burning that occur continuously. The low-income population is certainly the most vulnerable because it has fewer resources to claim their rights, fight for their maintenance and acquire resources to treat possible diseases that come to contract, and prevent them in the future.

In this whole scenario, there is an incompleteness in the urbanization process, which does not yet have basic sanitation services consistent with what would be expected for a healthy city. It is also worth inferring the existence of a marked gap from the point of view of socio-educational practices, both involving the population itself and public managers, especially when it comes to Environmental Education.

V. Conclusion

The starting point of this study was to stimulate a form of dialogue, to investigate how the expression about the panorama that is formed in the city with the presence of garbage spread over a large number of places, and the impact caused, in the evaluation of each participant, on life in the urban space in which it resides. An approach was configured regarding the recognition of the fact that it is inescapable to live with solid waste. From a relationship point of view, it was recognized that tolerance with this fact became a complex condition, because it was marked by contradiction: the informant himself integrates the environment in these conditions, and is forced to a type of recognition that is not able to accept.

What ends up happening is an automation, also not always identified, produced by routine and habit, in which only the critical dimension remains. The landscape is the usual, the malaise is routine, not always verbalized, and that will not be broken without an external process. From this arises the condition of thinking about approaching the phenomenon as a representation of knowledge. The characterization of each item of the vocabulary raised and the proportion in which it is mentioned in the set of verbalizations can inspire projects aimed at the organization of controlled vocabulary.

In the research decision stage, it is important to think about what vocabulary will be generated, as one of the objectives. There is a set of meanings extracted from revelation that configure a process of organization of knowledge, and at the same time of environmental education. What is sought to be proved here is the possibility of data still in the research phase feeding reflections on ways to achieve an approach of representation of knowledge.

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An Integrated GIS Method – The Influence of Human Activities on Shoreline Change in Western Indian Small Island States: A Two Centuries Analysis of Urban West Unguja - Zanzibar Shoreline

By Salim Hamad Bakar & Shafi Noor Islam
University Brunei Darussalam

Abstract- Urban areas have a high impact of shoreline changes that are influenced by human activities rather than natural factors, together with hard structural mitigation and management which are more practiced compared to other areas. The shoreline of Urban West of Unguja Island in Zanzibar has been undergone changes in different stages due to human activities either like; reclamation of Darajani creek, port expansion at Malindi, Mtoni beach nourishment, sewer and stormwater channeling at Kilimani, construction of walls, groins, and jetties, etc., however, the area experience more accretion rather than retreat, integrated analysis and projections of the overall accretion and retreat for 174 years is 1,527,693.85 m^2 (1.53 km^2) and -936,135.48 m^2 (-0.94 km) receptively. The average accretion of land from 1846 to 2020 is 8,779.85m^2/yr. (0.0088 km^2/yr.) and retreat is -5,380.09m^2/yr. (-0.0054 km^2/yr.). A major accretion was observed and detected during the early 1900s to late 1987 where major land transformation with other minor development activities between 2010 to 2020.

Keywords: *human activities, shoreline changes, accretion, retreat, urban management, zanzibar.*

GJHSS-B Classification: *DDC Code: 628.1682 LCC Code: TD653*

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Salim Hamad Bakar [α] & Shafi Noor Islam [σ]

Abstract- Urban areas have a high impact of shoreline changes that are influenced by human activities rather than natural factors, together with hard structural mitigation and management which are more practiced compared to other areas. The shoreline of Urban West of Unguja Island in Zanzibar has been undergone changes in different stages due to human activities either like; reclamation of Darajani creek, port expansion at Malindi, Mtoni beach nourishment, sewer and stormwater channeling at Kilimani, construction of walls, groins, and jetties, etc., however, the area experience more accretion rather than retreat, integrated analysis and projections of the overall accretion and retreat for 174 years is 1,527,693.85 m^2 (1.53 km^2) and -936,135.48 m^2 (-0.94 km) receptively. The average accretion of land from 1846 to 2020 is 8,779.85m^2/yr. (0.0088 km^2/yr.) and retreat is -5,380.09m^2/yr. (-0.0054 km^2/yr.). A major accretion was observed and detected during the early 1900s to late 1987 where major land transformation with other minor development activities between 2010 to 2020. Sea walls, groins, beach nourishment, mangroves, barrier islands, and islets are major management practices of the shoreline which shows positive impact. Integrated methods were used to analyze and detect changes using a sketch, topographic map, and images which were carefully georeferenced with latitude and longitudes digitized using ArcGIS and demarcated along the study area supported with ground truth observation.

Keywords: human activities, shoreline changes, accretion, retreat, urban management, zanzibar.

I. Introduction

Coastal zones are places where many people would like to visit, invest and enjoy, thus why human major projects have been developed, small islands areas, ecosystem services are among the major economic driving factors [1]–[3]. In many countries, cities are allocated along the coast [4] which are the most populated places in the world holding high population density (Kaneko et al., 2015). Historically coastal zones were most used before the invention and advancement of space and air transport development thus, navigation along ocean and rivers were the most transportation means [7] which influence the development of mega projects that we are witnessing nowadays in many countries; port and harbor development, towns [8] and entertainment like tourism development [9], etc. Due to these development projects, tremendous changes along the coast become vulnerable to flooding due to climate change impacts such as Sea Level Rise [9], [10].

Although coral and limestone Islands have natural protection along the shore, the continuous wave processes over a long time, sea-level rise, monsoon winds, and other human activities like tourism influence the dynamic process (Arthurton, 2004) of either accretion or retreat/erosion (Arthurton et al., 1999; Mahongo et al., 2011; Ngusaru, 2000; Nyandwi, 2010, 2015). On one side it could be considered are social and economic development [3] however, on another side, there are many impacts on ecology and environment [5], [16], [17] due to these anthropogenic. The shoreline of Small Island States has been originally changing over time like any other coast however when there is over interaction with human activities causes excess use of resources to interfere with the shoreline systems and processes [16], [18].

The general results in Urban West of Unguja Zanzibar shoreline, showing more accretion rather than retreat, the situation has been associated with major reclamation, especially at Darajani, Mnazi Mmoja, and Malindi port area extension, as well as beach nourishments at Mtoni due to the hotel and mariner development. Also, it has been revealed that five major types of mitigation and management measures that influence to reduce retreat are; mangroves, sea walls, groins, islets, inlets, and beach nourishment, even though the hard structural measures like groins and sea walls are helpful, they also exacerbate retreat in adjacent sides where there are luck such management practices. The experience shows that once the decision of construction of walls, jetties, and groins in urban areas should be at entire distributed along the shoreline or small part of urban forest mangroves buffer should be maintained as a control measure otherwise the adjacent sides will suffocate from severe erosion or retreat. This paper analyzes how human activities influence the transformation of shorelines and to what extent the long-term shoreline changes of Islands and urban areas have been reshaping coastline processes and management.

Author α σ: Department of Geography, Environment, and Development, Faculty of Art and Social Science, University Brunei Darussalam.
e-mails: salimbkr@yahoo.co.uk, shafi.islam@ubd.edu.bn

The paper also considers how Geographical Information System on digital spatial analysis is important to detect, visualize shoreline position and also could be possibly used for coastal urban development, decision making, and management. The paper also considers a field survey and observation that was made by the author from August 2019 to January 2020 at Urban West of Unguja Island, Zanzibar.

II. Methods and Study Area

The area of the study is the Urban West Region of Unguja, Zanzibar. Zanzibar is one of two countries that form the United Republic of Tanzania which is also among the Small Island Developing States of the Western Indian Ocean [6]. Zanzibar is located on the eastern coast 40 km away from the east coast of Tanzania Mainland, West of the Indian Ocean. There are two major islands (Unguja and Pemba) and more than 50 other smaller islands and islets [6]. The northern tip of Unguja island which is the mother island is located at 5.72^0 Latitudes South and 39.30^0 East; with the Southernmost point at 6.48^0 South and 39.51^0 East. There is another Island of Pemba located at 4.870^0 South and 39.680^0 East, and the Southernmost point is located at 5.47^0 East (OCGS, 2018). Unguja is the larger of the two islands (having 1,666 km^2) and is some 35 kilometers from Mainland Tanzania, while Pemba (988 km^2) is located to the northeast (see also figure no. 3), around 55 kilometers from the Mainland [6]. The main objective of this paper is to analyze the coastal beach erosion vulnerability of Zanzibar, using GIS and RS applications, and find the relationship between the rate and trend of extreme beach erosion, extreme changing wind patterns, and sea-level rise, where the specific objectives are; 1. To analyze the rate and trends time series of coastal beach dynamic and shoreline changes between the 1880s to 2018, using GIS and RS application 2. To determine the relationship between extremely coastal beach erosion and extreme changing of wind pattern and sea-level rise 3. To determine the vulnerability of Zanzibar coastal zones in terms of population displacement, coastal squeeze and loss of associated ecosystem services, and the limit of land capacity. 4. To identify current best practices and possible motivating adaptation factors in building resilience and reducing the risk for coastal beach management.

The Urban West of Unguja Town also known as Zanzibar Town/City, the region has three districts with more than 700,791 population until 2019 [20] based on 2018 population projection, with a density of more than 2600/km^2 [6]. The general characteristics of the coast are intertidal fringing coral-rich limestone of Pleistocene age (Arthurton et al., 1999), the shoreline of Urban West of Zanzibar City is a fringing reef, cliff coral, beaches and sandbanks, stream deltas, mangroves with mudflat and wetland. It has a warm and humid tropical climate with an average rainfall exceeding 1500mm/year and an average temperature of above 26 ^{0}C, which is also influenced by Northern and Southern Monsoonal winds (Arthurton et al., 1999; Watkiss et al., 2012)

The dataset used for spatial analysis is from the Guillain sketch plan survey map of 1846, and Baumann sketch plan survey map of 1892 (1: 10,000 Scale), Map of Zanzibar PWD No./44 M-8 of 1907 (1: 63,360 Scale), Hydrological Map of Zanzibar Map No. 3344 of United Nation of July 1987(1: 125,000 Scale), Aerial photographies field 2004 - 2005 from the Department of Survey and Urban Planning under Smole II project, Landsat image data from SIO, NOAA, US Navy NGA, GEBO, CNES/Airbus 2020 google image 2019 copyright dataset (see also in table 1). All sketch maps, topographic maps, and images were carefully georeferenced with hours, minutes, and seconds (latitude and longitudes) using ArcGIS software whereby spatial analysis was made through demarcated along the study area. The study also involves ground truth observation carried out between August 2019 and January 2020 where photos, GPS coordinates, and video were collected to support the analysis.

Table 1: Type of data set and their sources

Dataset	Year	Scale	Author/Publisher/Organization
Map Plan	1846		Guillain 1846
Map Plan	1892	1:10,000	Baumann 1892
Topographic Map	1907	1: 63,360	Zanzibar PWD No./44 M-8 of 1907
Topographic Map	1987	1: 125,000	United Nation No. 3344 of 1987
Aerial Photograph	2004		Department of Survey, Zanzibar 2004-2005
Landsat Image	12/27/2010	2000ft	Google Map 2020 datasat
Landsat Image	02/24/2016	2000ft	Google Map 2020 datasat
Landsat Image	07/27/2017	2000ft	Google Map 2020 datasat
Landsat Image	10/11/2018	2000ft	Google Map 2020 datasat
Landsat Image	07/24/2019	2000ft	Google Map 2020 datasat
Landsat Image	02/26/2020	2000ft	Google Map 2020 datasat

Shoreline spatial analysis carried out about 15km and 5km stretch of Urban Wes of Zanzibar City from Kilimani to Mtoni area, a mixed and integrated method using map and images for long term changes detection which is also used by [21]–[23], which is suitable to detect and analyze long time series of shoreline change when there is a limitation of data such as images of more than 100 years. It was used to analyze the shoreline position from 1846 to 2020 based on the distance of the shoreline stretch and area differences compared one dataset time shoreline position to another after being merged in both accreted or retreated. That means; dataset was carefully scanned, georeferenced, alienated, digitized, plotted, and merged, and then area measurement and geometry calculation were carried out to each spatial difference accreted or retread/eroded/reclaimed between two shoreline positions of executive years, then shoreline position was used to categorize the dynamism of changes of the area as such comparative for qualitative method has been used by [24], [25], as well as quantitative methods from dataset shoreline position differential in geometry calculation both length and area in meter square/kilometer square of each shoreline.

III. Results and Discussion

After carefully spatial analysis of mixed data, the results were categorized based on the availability of information collected, there was a dataset that only covers part of the Urban West shoreline only 5 km, and a dataset that covers 15 km shoreline. Also, results from analyses were performed based on the potential of the areas, length, and area of shorelines accretion and retreat as well.

a) Maisara, Malindi to Funguni shoreline changes between 1846 to 2020

This is an important area in Zanzibar where the capital city (Zanzibar City) is located, results showing there are tremendous changes of Malindi area due to extension of port and reclamation of Darajani creek and Mnazi Mmoja areas. Malindi port during 1846 observed having huge sand deposits at the shore (see figure 3 the year 1846) in a place known as '*Funguni'* in Swahili which means the bank of sand deposit which developed north to the southwest along the shoreline, however at the inlet which is Darajani creek also known as '*Pwani ndogo'* looked wide and extended to the southwest up to about 0.46 km square inland as seen in figure 1.

In this year (1846) it could be seen a small Islet called Kisiwani within the inlets whereby the time was called '*Pwani Mbovu'* (rotten sea) which is nowadays is known as Mnazi Mmoja area (figure 5 the year 1846). In figure 5 year 1892 the top north of Malindi area is observed there is development of '*ras'* due to improvement of deposit and port extension and the expansion of the Stone Town city along the bank of the creek especially at Mbuyuni, Darajani, Kisiwandui, Mkunazini, Mchambawima, Kokoni and Mnazi Mmoja, these areas especially Mbuyuni and Kokoni were the areas with huge mangroves at this time, the analysis showing that the Kisiwani Islet at Mnzi Mmoja is already joined with Eastern part land of Mnazi Mmoja and Kikwajuni which form shoreline to change by creating new land area, due to the slowly reclamation and extension of the city, even though there was a slightly erosion and over floor of seawater, changes also is observed at top north of Malindi inside creek where there is high erosion forming an elbow shoreline shape probably due to the amount of water coming inside the creek bouncing along the bank of western part of the creek, from these changes also slowly result shoreline length reduction.

In 1907 the passage of Creek at the north part at Funguni starts to narrow and the southern part of the inlet at Mnazi Mmoja as well. The result shows that by this time at Funguni and Malindi there is more development seaward especially in the Forodhani area (see figure no. 5 the year 1907).

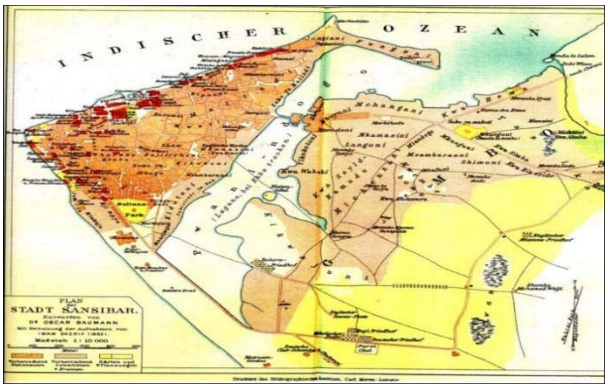

Figure 1: Unguja Urban West plan of 1892 with its creek

Figure 2: Unguja Urban West map image of 2020

Figures 1 and 2 above they are showing how the transformation of land from sea to land. The creek has been reclaimed from 1892 to 2020. In between 1907 to 1987, there is a major change, a tremendous and major reclamation was done in this time, in figure 1, 2, and table 2 above, figure 3, 4, and 5 below are showing clearly the entire creek from Mnazi Mmoja, Darajani to Funguni at this time was reclaimed and transformed into other human development projects like; cities and other huge construction took place during this time. About 0.46 km square of the creek where it was called a rotten sea and '*Pwani ndogo'* (figure 1 and 2 above) was reclaimed totally except a small portion which is now called Bwawani wetland. At the northwest of the area there is an extension seaward side up to several meters for Malindi port expansion (see figure 5 the year 2004 - 2020), figure 3 and 4 are an example of changes before reclamation in 1920 and after 2020 respectively. However, at this time there was much sea wall development for protection along the entire shoreline of Zanzibar Stone Town to manage the shoreline and properties from wave destruction.

Source: ZNA A23(73)

Figure 3: Darajani Creek 1920 with shopping facilities

Figure 4: Former Darajani Creek, now Darajani with shopping facilities 2020

Figure 3 and 4 show clearly how and to what extent shoreline has been shifting and even dropping its length from 1846 to 2020; Mpigaduri mangroves northeast of Malindi has been acting as a defensive mechanism for every reclamation that was made within nearly 2 centuries (174 years) from 1846 to 2020.

Shallow and calm water of western side of Unguja Island together with barrier coral Islets at far north from Malindi port has been protecting the Island from direct strong waves and longshore bouncing, however, apart from this natural protection, the removal of Mpigaduri mangroves will highly affect the entire shore unless there will be other feasible adaptation measures. This development of mega projects although is said to be an advantage for land accretion also, the analysis shows there were challenges along the shoreline especially at the Funguni passage; in this area, there is extra erosion and inland water floor which extend several meters to Mpigaduri up to Mtoni shoreline that has also influence the development of mangroves (see also figure 5) although the increasing of mangroves is an advantage, it was also seeming like an attempt of increasing level of water at Malindi port in such a way that seafloor forced to change its direction to the southwest where there was a high and long impacts on this shoreline, two jetties are evidence (figure 5 the year 2004 – 2020) which were constructed offshore of Malindi and Funguni site to trap the sediments and protect the port from sediment accumulation to avoid the high cost of maintenance of dragging at later days.

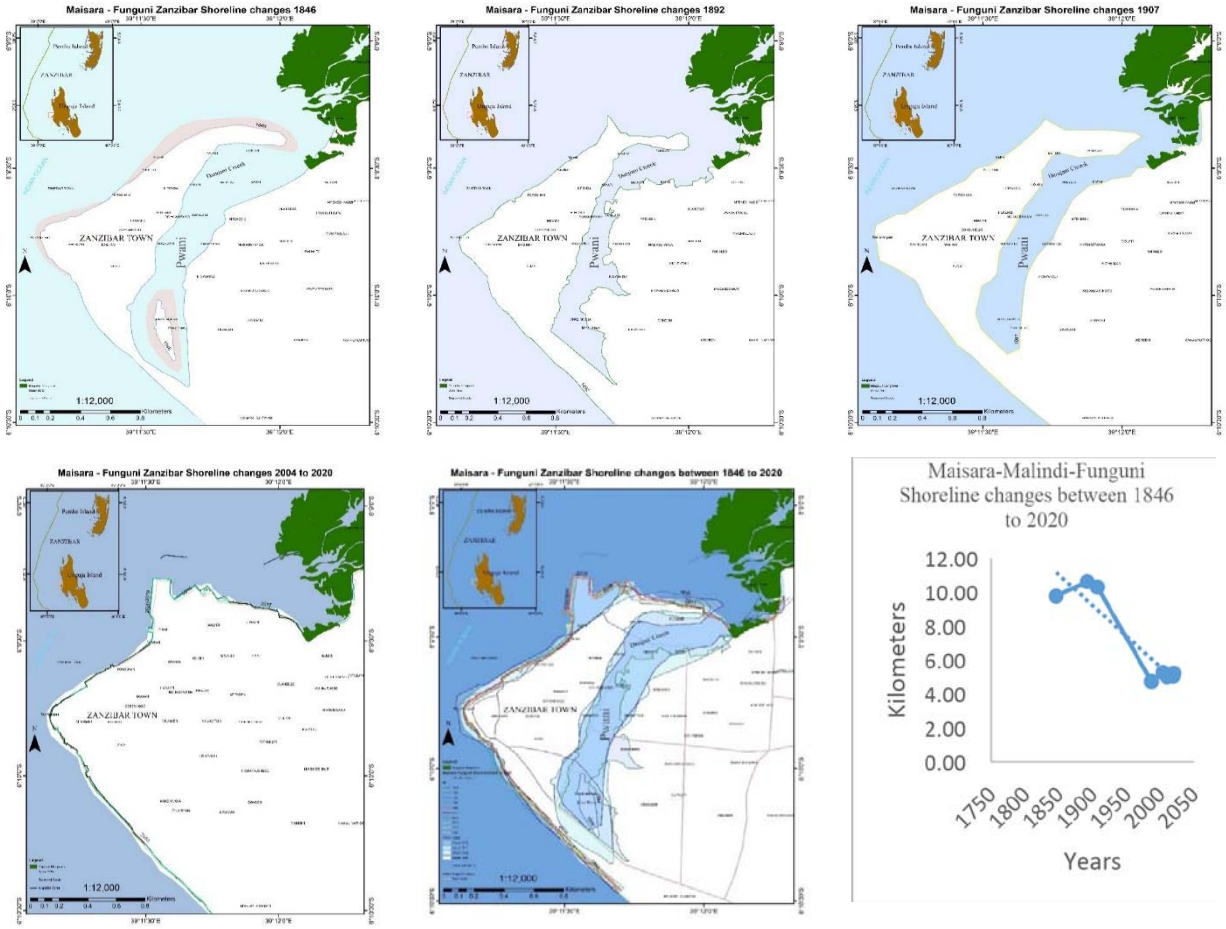

Figure 5: Maisara - Funguni Zanzibar shoreline changes

Apart from human influences, some other factors have also influenced the changes of shoreline, there are natural processes as discussed by (Arthurton, 2004), even though there is no direct report of climate change impacts such as sea-level rise until the 1980s due to the limited availability of data sources in Zanzibar that could be also a reason for shoreline changes, some studies [26] showing falling of relative sea-level until 2000, it might be also a bit of good luck for the city to reduce severe impact from flooding of the shore. However, in recent years between 2000 to 2012 [1] shows there is a sign of rising in sea level that could be also possible related to shoreline changes [11], [27], thus why in some areas like Kilimani (will be explained later) have been facing such challenges which are associated to climate change impacts.

b) Shoreline changes Kilimani to Mtoni between 1846 to 2020

It was found that when the shoreline is longer than the previous one is an indication of having either too much retreat or huge accretion. The trend of the shoreline length in figure 6 shows that in the early 1900s (1846, 1892, and 1907) shoreline was longer and started to shorten up to the late 1980s, however, the tendency of stretched again is shown from the late 1980s to 2020, where this is correlated with accretion and retreat results obtained as shown in figure 8 which will be explained later.

The figure shows four hotspots areas of changes, two have more accretion and two with more retreat of the shoreline. In Malindi hotspot which includes Darajani and Mnazi Mmoja (Zanzibar Town area) from 1846 to 2020, there is accretion as described earlier in this study, we could see the shoreline is longer and extended onshore several meters (see figure 7). The second hotspot that shows changes of accretion is the Mtoni area, this location has been accreted for the last decade in different years; 2010, 2004, 2016, 2017, 2019 to 2020. Kilimani and Migaduri are the other three and four hotspots respectively which their shoreline has seen to be longer and extended landward, for Mpigaduri hotspot which also involves Funguni and Kinazini; these areas according to spatial analysis are alternatives of wave movement to maintain a balance of Malindi and Darajani reclamation caused by port and city development which is adjacent to it. Likewise, Kilimani hotspot shoreline changes (figure no. 7 the year 1907 – 2020 and from the year 2010, 2016, 2017, 2019, and 2020) show different stages of shoreline changes that have been caused by many factors; the development of sewer channels that interrupted coastal processes and

causing seawater landward(inundate) and develop an inlet which did not exist before 2010 as shown in a map, although the area had a sandbank ridge in adjacent side of shoreline north westward there are walls thus why when seawater bounce is deflected and forced southeastward which found its way in loose white sand beach deposits which are easy to erode loose sandbank.

The area also, because it is on the opposite side where coastal processes are likely to be little interrupted from Malindi Darajani reclamation which is opposite side but rather climate change impact could also a causal factor, other activities like sewer and stormwater drainage construction and channeling were very likely the cause erosion (retreat) where seawater found its way easily to weep out loose materials of sandbank beside the sewer channel before 2004 Kilimani area there were many human activities practices; agriculture like paddy cultivation, sports, and likes, sadly in 2010 the area changed totally when seawater invade the area and reach up to settled zones during high tide with no agricultural activities nor sports and even reduction of a crosswalk along the shore, changing the ecological system and new form of the inlet, mangroves, salt marsh, and tidal flat dominated the area, in figure 7 someone can see how Kilimani changed from 1907 to 2020, and from 2004 to 2020.

i. *Area of land accretion and retreat of Urban West Unguja - Zanzibar Shoreline of Western Indian Ocean between 1846 to 2020.*

Accretion here is also meant deposits or land reclamation through natural and human influences through projects development or any other activities along the shoreline, the same way applies vise vasa to retreat. As we noticed earlier that one of the characteristics of the shoreline is that, when the stretch is long, it means either there is high erosional or deposition (retreat or accretion). It has been revealed in this study that, in 174 years the shoreline has been changed in different stages, for these years the geographical areas of Urban West sites experience more accretion rather than retreat, geographical, spatial analysis, and projections of the overall accretion and retreat in figure 8 and 9 shows for 174 years is 1527693.85 m^2 (1.53 km^2) and -936135.48 m^2 (-0.94 km) receptively. The average accretion of land from 1846 to 2020 is 8779.85m^2/yr. (0.0088 km^2/yr.) and retreat is -5380.09m^2/yr. (-0.0054 km^2/yr.) as shown in figure 8 above. A major accretion is observed during the early 1900s to late 1987 in which there was a major land transformation as shown in figure 9 below, as well as between 2010 to 2020. However, a land retreat is higher from 1987 to 2004.

The process of accretion and retreat took place in a reversal from year to year, observed areas of high accretion up to 2020 are Malindi, Mtoni, Darajani, Mnazi Mmoja, and Funguni, and the areas of the high retreat are some parts of Kilimani, Mpigaduri, Mtoni and parts of Maisara shoreline. The accretion in urban cities is likely associated with the development and technological advancement in many cities especially developed countries [28] compared to the previous situation of a higher rate of erosion postulated by Bird (1984). However still developing countries, SIDS, and rural coastlines facing a higher rate of recession.

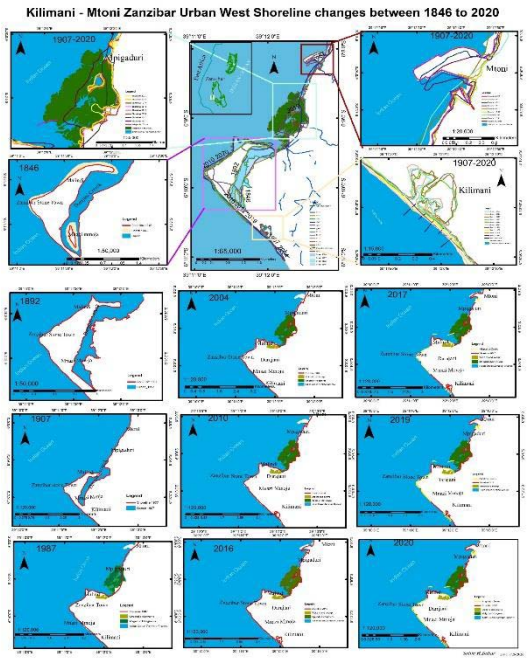

Figure 6: Kilimani - Mtoni Zanzibar Urban West shoreline Zanzibar between 1846 to 2020

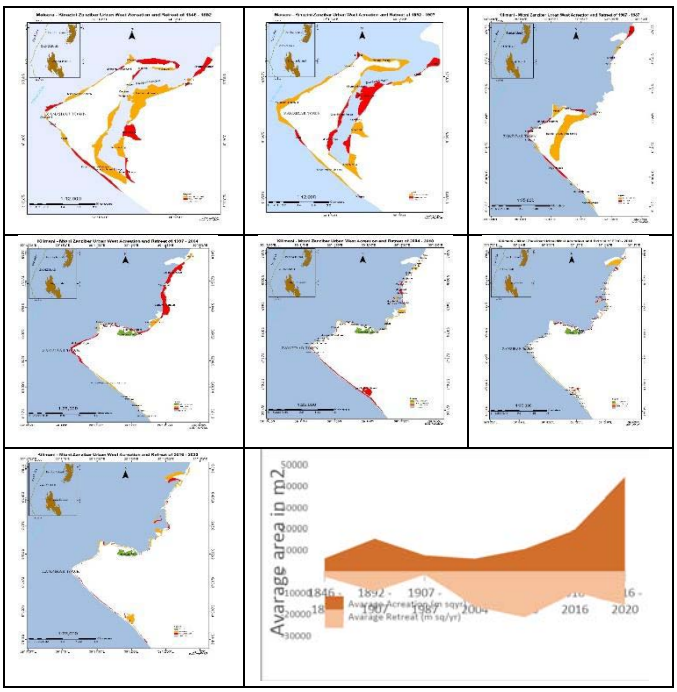

Figure 7: Accretion and retreat of the shoreline of Urban West of changes between 1846 to 2020

IV. Conclusion

There is a high impact of shoreline changes that are influenced by human activities rather than natural factors while also hard structural mitigation and management for properties are more practiced compared to other areas. Hard structural management always reduces sand deposits and seawater will find weaker and loose areas to retreat and inundate forming an inlet or canal landward when inlets are formed mangroves and other coastal vegetation will grow faster in a short period. A natural setting like small islands and islets acts as a barrier and should be considered in coastal urban development and Island states as management and protection measures. The extension of the city in shallow, long swash intermittent seafloor, closed shoreline coral and barrier reefs are likely to have low impacts if the reclamation will only consider natural setting and not exceeding coralline strip seaward side in consideration of mangrove site. Alternatively, the open and remote shorelines like small Islands and Islets are more likely to have high impacts when there is too much interruption from the human. Mangroves in urban areas are most important to slow the wave movement and balance especially when there is a major land transformation on the shoreline, thus when it comes to shoreline management through hard structural and engineering development at least a small portion of mangroves could be mitigated at these urban areas from the retreat and sever erosion as well as maintaining ecological and aesthetic value.

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Slam do Corpo: Brief Study on Deaf Poetry in *Slam Poetry*

By Natielly Santos

Abstract- This article is part of the ongoing doctoral research in the area of Literature and Culture (PPGLITCULT/UFBA) on the study of the performance of the body present in Slam poetry with a cut for artists and groups in Brazil. In this work, we dialogue with the definition of Slam poetry, directing us to our main object of study: the Slam do Corpo, the first Slam for deaf and hearing people in Brazil. During this brief study, we will discuss about deaf poetry and its main characteristics, as well as the influence of Slam do Corpo in the process of self-representation of deaf communities in Brazil.

Keywords: *slam poetry; deaf poetry; slam do corpo.*

GJHSS-B Classification: *DDC Code: 050 LCC Code: HF1625*

Strictly as per the compliance and regulations of:

Slam do Corpo: Brief Study on Deaf Poetry in *Slam Poetry*

Slam do Corpo: Breve Estudo Sobre a Poesia Surda no *Slam Poetry*

Natielly Santos

Resumo- **Este artigo faz parte da pesquisa de doutorado em andamento, na área de Literatura e Cultura (PPGLITCULT/ UFBA) sobre o estudo da performance do corpo presente no *Slam poetry* com recorte para artistas e grupos do Brasil. Neste trabalho, dialogamos com a definição do *Slam poetry* direcionando para nosso principal objeto de estudo: o *Slam* do Corpo, primeiro *Slam* de surdos e ouvintes no Brasil. No decorrer desse breve estudo, discutiremos sobre a poesia surda e suas principais características, assim como a influência do *Slam* do Corpo no processo de autorrepresentação das comunidades surdas no Brasil.**

Palavras-chave: slam poetry; poesia surda; slam do corpo.

Abstract- **This article is part of the ongoing doctoral research in the area of Literature and Culture (PPGLITCULT/UFBA) on the study of the performance of the body present in Slam poetry with a cut for artists and groups in Brazil. In this work, we dialogue with the definition of Slam poetry, directing us to our main object of study: the Slam do Corpo, the first Slam for deaf and hearing people in Brazil. During this brief study, we will discuss about deaf poetry and its main characteristics, as well as the influence of Slam do Corpo in the process of self-representation of deaf communities in Brazil.**

Keywords: slam poetry; deaf poetry; slam do corpo.

I. Introdução

Segundo o último censo do Instituto Brasileiro de Geografia e Estatística (IBGE) realizado em 2010, há 45,6 milhões de pessoas com deficiência no Brasil, o que compreende 24% da população. Deste número, cerca de 10 milhões de pessoas são surdas, o que equivale atualmente a 5% da população brasileira. Com o passar dos anos, as comunidades surdas cresceram no país, expandindo de forma significativa a comunicação por meio da língua de sinais. Apesar disso, o capacitismo[1] ainda está presente nos diversos setores sociais, políticos e culturais, o que interfere diretamente no devido reconhecimento da Língua Brasileira de Sinais enquanto língua, e na divulgação e incentivo das produções artísticas de pessoas surdas.

Na tentativa de resistir a esse cenário, as expressões artísticas surdas que compreendem a literatura surda, dança, *performance art,* música, entre outras linguagens, têm contribuído de forma efetiva na construção e disseminação das identidades e culturas surdas por meio de suas histórias e vivências.

Neste trabalho, destacamos a poesia surda como um gênero de grande expressão artística nas comunidades surdas no Brasil, inserida também na atividade *Slam poetry.*

II. Sobre o *Slam Poetry*

O *Slam poetry* foi criado nos Estados Unidos (EUA) em meados da década de 1980 por Marc Kelly Smith. Em entrevista para o documentário *Slam: Voz de levante* (2017), de Roberta Estrela D'Alva e Tatiana Lohmann (BRA), Marc relata que estava cansado do elitismo e do tédio que habitavam os saraus de poesias que aconteciam em bibliotecas e bares. Assim, resolveu "abrir o microfone", dando espaço para uma nova forma de representação da poesia, acrescentando alguns ingredientes como a competição, a performance, o jogo. O *flyer* da primeira edição do *Slam poetry* dizia: "Saia do caixão! Microfone aberto", fazendo uma crítica às formas já estabelecidas de se fazer, recitar, performar poesias. Podemos ressaltar que no *Slam* não é somente a poesia que conta para impressionar o público e os jurados, mas também a performance, ou seja, o modo como ela é apresentada pelo *slammer*. Quanto maior for a interação e desenvoltura entre poesia, corpo/voz, entonação, gesto, movimento, maior a possibilidade de acalorar os ânimos, provocar os sentidos dos espectadores e, consequentemente, conquistar a atenção e euforia da plateia e dos jurados, nesse jogo performático e competitivo.

Em trabalhos anteriores a esta pesquisa, tentamos definir o *Slam poetry* como uma espécie de competição de poesias, em que os *slammers* devem apresentar em até 3 minutos suas obras autorais, sem acompanhamento musical e/ou adereços, para receber a nota de 0 a 10 dos jurados que são escolhidos eventualmente na plateia (SANTOS, 2018). Atualmente, percebemos que essa definição é apenas uma das inúmeras características presentes nessa atividade. De fato, o *Slam* possui algumas regras básicas como as citadas acima, porém isso vem se modificando ao longo dos anos, devido à multiplicidade cultural que essa modalidade apresenta em diversos países, sendo acrescentadas outras regras e características de acordo

Author: e-mail: santosnatielly.ufba@gmail.com

[1] Preconceito à pessoa com deficiência auditiva, visual, físico-motora, intelectual, entre outras.

com cada grupo. Ao longo dos anos, influências como o movimento *Hip Hop* nos Estados Unidos, por exemplo, incrementaram o *Slam* com novas formas e temáticas para as poesias. Segundo Marc, "os artistas do *Hip Hop* chegaram no *Slam* no começo dos anos 90, e eles vieram porque eram escritores e alguns deles queriam fazer mais do que letras de músicas" [2].

Hoje no Brasil, temos um panorama significativo com relação aos adeptos dessa atividade, inúmeros grupos e campeonatos surgem ao longo do país. Podemos citar como exemplo, o evento *Slam* BR (Campeonato Brasileiro de Poesia Falada) que reúne os principais *slammers* do país, grupos como *Slam* da Resistência, *Slam* da Guilhermina, *Slam* das Minas e o *Slam* do Corpo, nosso principal objeto nessa pesquisa.

III. O *Slam* do Corpo e a Poesia Surda

O *Slam* do Corpo é o primeiro *Slam* de surdos e ouvintes do Brasil, idealizado pelo grupo Corpo Sinalizante, formado por jovens surdos e ouvintes com ênfase no estudo da Língua Brasileira de Sinais (Libras) ligada à arte. Geralmente, o *Slam do Corpo* acontece em museus e parques de São Paulo (SP), tendo algumas edições pontuais realizadas em alguns eventos espalhados pelo Brasil. Ele divide-se em dois momentos: corpo aberto, em que qualquer pessoa pode apresentar uma poesia e a batalha, em que ocorre a competição de poesias. Há algumas regras dentro dessa atividade, como por exemplo, a não utilização de figurinos, adereços, cenários e acompanhamentos musicais. Os vencedores desse *Slam* recebem livros e outros prêmios educativos, após o somatório de notas do grupo de jurados escolhidos no dia das apresentações.

O ator, poeta e educador surdo Leonardo Castilho, um dos fundadores da modalidade, afirma que no *Slam* há um compartilhamento do trabalho entre surdos e ouvintes, e não uma fusão entre essas culturas. A fusão deixa subentendida uma junção entre as duas línguas citadas, já o compartilhamento pressupõe uma relação mútua entre as duas línguas, sem que estas percam as suas particularidades, numa espécie de complemento e não de sobreposição de uma com a outra. Ele ainda utiliza a metáfora "beijo de língua" para simbolizar essa quebra de barreiras, pois o beijo significa conhecer o outro, a língua do outro, e para acontecer precisa das duas pessoas juntas, disponíveis a este momento. É exatamente o que ocorre na batalha: é formada uma dupla de surdo e ouvinte, que se apresenta para os jurados e para a plateia. Neste momento as poesias devem ser autorais, com temática livre e ter duração de, no máximo, três minutos. São realizadas duas rodadas de apresentações, contando com a presença dos jurados composto por surdos e ouvintes, que dão notas de 0 a 10. Há um ritual antes da apresentação dos *slammers*, marcando o início das poesias: colocam-se as mãos para frente, deslizando-a sobre os braços e batendo uma na outra, como uma espécie de "grito de guerra" dando início à performance de cada competidor.

Durante o estudo de algumas poesias da literatura surda, percebemos que a palavra muitas vezes não é o foco, mas sim a sensação que ela provoca dentro do que está sendo apresentado. Sobre isso, Spence (2021) afirma que "o foco está na linguagem estética que, geralmente, é fortemente visual e cuidadosamente construída para maximizar o impacto dos sentidos". Assim, o Vernáculo Visual[3] se apresenta como uma técnica essencial na literatura surda, pois potencializa o visual, sem condicionar a poesia apenas ao vocabulário em sinais.

Como exemplo disso, cito a poesia "Todas as Manhãs" da autora negra brasileira Conceição Evaristo (1998), interpretada pelos surdos brasileiros Edinho dos Santos e Nayara Rodrigues, em vídeo disponibilizado no Youtube. Vejamos o primeiro trecho: "Todas as manhãs acoito sonhos e acalento entre a unha e a carne uma agudíssima dor". Para "Todas as manhãs", Edinho faz o sinal de nascer do sol com movimentos circulares repetidos que prolongam o tempo do sinal, indicando este ciclo no qual a frase se refere (nascer, se pôr, nascer, se pôr, nascer…) e criando ritmo à poesia. Em "agudíssima dor", o movimento se inicia com as mãos expressando uma dor no peito, que depois se espalha pelos braços, a face em dor e angústia, e não o simples sinal de "dor" em Língua Brasileira de Sinais (Libras). Dessa forma, a ênfase nos gestos, nos movimentos, nas expressões corporais e faciais, se torna também um elemento importante na poesia surda. Erika Mota, tradutora e intérprete de Libras, parceira do Leonardo Castilho nos *Slam* do Corpo, em entrevista, relata que "a rima na língua de sinais está na configuração de mão, no ritmo", o que torna essa poesia ainda mais característica e particular acerca da expressividade e compreensão.

Neste ponto, é necessário diferenciar gestos e sinais. Para McNeill (1992) os gestos são movimentos corporais e expressões faciais livres, espontâneas presentes na linguagem humana. Já os sinais são constituídos de aspectos linguísticos e gramaticais. Karnopp (2004) afirma que é "complexa a distinção entre sinais e gestos, pois ambos são referenciais, comunicativos e produzidos manualmente." Entretanto, a autora também afirma que há equívoco em entender sinais como gestos. Segundo ela,

[2] Entrevista disponível no documentário Slam: Voz de Levante (2017).

[3] Conforme Abrahão e Ramos (2018), o Vernáculo Visual "é uma forma estética performática e narrativa, produzida a partir das línguas de sinais, mas que, propositalmente, usa poucos sinais padronizados – e, por vezes, nenhum".

> Na verdade, os sinais são palavras, apesar de não serem orais-auditivas. Os sinais são tão arbitrários quanto às palavras. A produção gestual na língua de sinais também acontece como observado nas línguas faladas. A diferença é que no caso dos sinais, os gestos também são visuais-espaciais tornando as fronteiras mais difíceis de serem estabelecidas. Os sinais das línguas de sinais podem expressar quaisquer ideias abstratas. Podemos falar sobre as emoções, os sentimentos, os conceitos em língua de sinais, assim como nas línguas faladas. (QUADROS; KARNOPP, 2004, p. 31-37)

Assim, entendemos que os gestos são elementos de linguagem que fazem parte das línguas de sinais, porém não são a própria língua, já que esta tem estrutura morfológica e sintática.

Do ponto de vista identitário e cultural, não podemos deixar de ressaltar a importância de atividades artísticas como o *Slam* do Corpo, no fortalecimento da construção das identidades surdas e valorização da língua de sinais. Historicamente, as comunidades surdas espalhadas pelo mundo sofreram diversas opressões acerca de sua língua, identidade e cultura. Portanto, a poesia surda também se torna um ato de resistência e fortalecimento das comunidades surdas.

Devido à pandemia Covid-19, em março de 2021 o *Slam* do Corpo apresentou uma edição online dentro do Festival Corpo da Palavra, realizado pelo Museu de Arte Moderna de São Paulo (MAM) com transmissão no Youtube. De forma dinâmica e criativa, poetas surdos e ouvintes performaram suas poesias em frente às câmeras, lidando com o distanciamento social e com as ferramentas tecnológicas. O público que até então interagia com gritos e gestos nos eventos presenciais, manifestou-se por meio de chat com mensagens acaloradas e encorajadoras. Os *slammers* adicionaram no seu repertório, poesias que retratavam sobre o momento atual da pandemia, bem como temáticas já recorrentes como a valorização das identidades surdas, a violência, o racismo, entre outras.

IV. Considerações Finais

Podemos identificar durante esse breve estudo, as particularidades relacionadas à poesia surda e suas manifestações, sobretudo, relacionadas à atividade do *Slam poetry*. Como apontamos nesse artigo, os gestos e sinais estão presentes nessa performance, que tem o corpo como um elemento em que a poesia se faz; o corpo torna-se ponto de partida e principal local de realização da poesia surda. Além disso, o *Slam* do Corpo fomenta não só a interação entre a Língua Brasileira de Sinais e a Língua Portuguesa, mas também a valorização das identidades e culturas surdas, incentivando cada vez mais a inserção de artistas surdos no *Slam*, no teatro, na *performance art*, na dança, na música, na fotografia, e em diversas linguagens.

Os estudos sobre a literatura surda demonstram que ela se apresenta não só de forma escrita, mas também em vídeo, e isso contribui no processo de autorrepresentação do povo surdo, de como ele se vê e não como a sociedade ouvinte costuma retratá-lo, sob o ponto de vista clínico/patológico. Esta pesquisa que segue em andamento, busca a compreensão acerca da performance do corpo tão presente na poesia surda, envolvendo não só a representação, mas também os processos criativos desenvolvidos pelos *slammers* surdos e ouvintes. Não podemos deixar de ressaltar que essas histórias e vivências, que são compartilhadas por meio das mãos, dos gestos, dos sinais, do corpo, atravessam gerações e também se configuram como ação de resistência das comunidades surdas no país.

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The Reality of Entrepreneurship and Innovation Culture at the Higher Education Institutions in Libya: An Applied Study on the Faculties of Economics and Engineering at the Universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha

By Mohamed Ahmed Alswad & Ridha Ali Mohamed Ben Saleh
Universities of Tripoli

Abstract- The study aimed to identify the philosophy of entrepreneurship and innovation and its historical evolvement. More importantly, it aimed at investigating the reality of entrepreneurship and innovation culture in the faculties of economics and engineering in the universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha in four dimensions. Namely: academic staffs, curricula and teaching methodology, administrative organization and support research projects, in addition to another dimension which measure the attitudes of academic staff toward this field. The study handled the descriptive approach with its tools and the respondents were academic staff members at the mentioned faculties. The results revealed that the faculties in the sample have many weaknesses in the field of entrepreneurship and innovation, particularly, in these areas: (I) academic staff, (II) curricula and teaching methodology, (III) Administrative organization, (IV) support research projects. While the only strength point was found is the academics' desire to draw on the entrepreneurship and innovation field.

Keywords: entrepreneurship and innovation, cognitive capital, creative thinking, knowledge economy, social entrepreneurship.

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Mohamed Ahmed Alswad [α] & Ridha Ali Mohamed Ben Saleh [σ]

Abstract- The study aimed to identify the philosophy of entrepreneurship and innovation and its historical evolvement. More importantly, it aimed at investigating the reality of entrepreneurship and innovation culture in the faculties of economics and engineering in the universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha in four dimensions. Namely: academic staffs, curricula and teaching methodology, administrative organization and support research projects, in addition to another dimension which measure the attitudes of academic staff toward this field. The study handled the descriptive approach with its tools and the respondents were academic staff members at the mentioned faculties. The results revealed that the faculties in the sample have many weaknesses in the field of entrepreneurship and innovation, particularly, in these areas: (I) academic staff, (II) curricula and teaching methodology, (III) Administrative organization, (IV) support research projects. While the only strength point was found is the academics' desire to draw on the entrepreneurship and innovation field. Hence, the study formulated a set of recommendations; the first and foremost is to provide courses on entrepreneurship to be introducedto the students in the field of entrepreneurship and innovation. Furthermore, conducting training and awareness programs in order to equip the academic staff with teaching and writing skills of entrepreneurship. And last, allocating a specific budget to indorse such projects so as to students can turn their entrepreneurial ideas and graduation projects into reality.

Keywords: entrepreneurship and innovation, cognitive capital, creative thinking, knowledge economy, social entrepreneurship.

Is academic staff amenable to entrepreneurship and innovation field in the same sample?

I. Introduction

Change across the ages is considered a universal and social norm that occurs as an urgent reaction to meet ongoing development and growth in life. Ibn Khaldun is the first scholar who highlighted the inevitability of f in his introduction written at the end of the thirteenth century. He claimed that the conditions of the world and nations do not constantly go stable. Rather, it is a transition from one state to another through ages (Ibn Khaldun, 2004). Undoubtedly, entrepreneurship is generally defined as a creative behavior leading to regeneration, modernity and innovation. It is also concerned with creation of new activities and businesses that result in development and impressive outcomes. Therefore, entrepreneurship and innovation have become the main core of interest of many governments as it is regarded a critical element in accomplishing economic excellence and growth as well as establishing a creative environment. The impact of the Fourth Industrial Revolution and the development in the realm of digital economy and the common use of its terms, such as: Blockchain, robot, fintech, and the Internet of things, Self-driving vehicles, 3D printing, nanotechnology, and biotechnology, would exemplify the importance of entrepreneurship and innovation in this era (Klaus, 2016). From the education point of view, higher education institutions in any country are considered the fundamental base that leads to cognitive, economic and social development. Higher education institutions went through a radical transformation across ages; it was converted from the stage of traditional education that prevailed in the 15th century to the stage of research in the 17th century and then to the stage of community service during the last decades. These institutions became the main driving tool for development and change in most societies, especially Western ones, where the term of entrepreneurial universities emerged.

a) Research Problem

The Global Competitiveness Report 2015 indicated that Libya Universities' outputs neither meet the needs of society nor labor markets. Consequently, universities graduates in Libya unable to create job opportunities in the private sector (Global Competitiveness Report, 2015). This is confirmed by the World Bank's Dynamics report of the Labor Market in Libya 2016, the latter stated that the employment rate in the public sector in Libya is estimated at 84% in 2012 while this percentage has increase to around 88% in 2021 according to the Libyan Financial Ministry. In the same vein, Libya has been completely absent from the Global Innovation Index for the last three years (the Global Innovation Index 2019, 2020, 2021). This index assesses the effectiveness of entrepreneurship and innovation policies in the economies worldwide based on eighty measures, including the education system. Since the education system, especially higher

Author σ: Faculties of Economics and Engineering at the Universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha.
e-mail: bensaleh@zu.edu.ly

education, is the backbone for bringing change and development to society, it has become of paramount importance to study and analyze the field of entrepreneurship and innovation in Libyan HEIs Universities in order to identify and tackle its problems. To this end, the problem of the study can be summarized in the following questions:

What is the reality of entrepreneurship and innovation in terms of academic staff, curricula and teaching methodology, administrative organization, and support research projects in the studied sample? Besides,

What are the attitudes of accademics toward entrepreneurship and innovation field in the same sample?

b) Objectives

The aims of this study are:

1. To understand the philosophy and concept of entrepreneurship and innovation and its historical evolvement.
2. To identify the reality of entrepreneurship and innovation culture at the level of administrative organization, academic staff, curricula and teaching methodology and support research projects.
3. To explore academics' attitude to draw on the field of entrepreneurship and innovation.

c) Importance

Youth are the main focus on entrepreneurship and innovation field on one hand. Libyan HEIs Universities, on the other hand, is the prominent sector which can equip youth with the entrepreneurial and innovative knowledge and skills. In other words, the presence of main aspects in the field of entrepreneurship and innovation in Libyan Universities at the level of qualified academics, curricula and teaching methodology, administrative organization and support research projects will have adverse affect on the outcomes of Libyan Universities. For instance, qualified academics with entrepreneurial mindset and good teaching expertise are significant to transfer entrepreneurship knowledge and skills to students as the latter, in later stage, will have the ability to transfer knowledge into technology and establish their own entrepreneurial projects and companies and thus creating impactful economic growth. To the best of our knowledge, there are very few start ups in Libyan economy and this is can be attributed to the weakness of Libyan Universities in the field of entrepreneurship and innovation . Therefore, it is essential to identify the level of embodiment that Libyan Universities have in the field of entrepreneurship and innovation in the aforementioned aspects, in addition to investigate academics' attitude to draw on this field. The result and recommendations of this study, which is the first of its kind, will be a basis for prompting entrepreneurship and innovation field not only at the level Libyan University but also policy makers in higher education institutions, which, in return, will have a positive effect on enhancing the outputs of these institutions to entrepreneurial opportunities based on the knowledge economy in Libya.

d) Hypotheses

H1: low awareness of entrepreneurship and innovation among academics.

H2: lack of the curricula of entrepreneurship and innovation.

H3: Weakness of administrative organization in entrepreneurship and innovation field.

H4: Scarcity of research support for entrepreneurial and innovative field.

H5: Academics have a negative attitude to draw on entrepreneurship and innovation field.

e) Research Methodology

Quantitative descriptive research method is used in this study. Additionally, data is gathered based on a questionnaire which had designed and distributed electronically.

f) Literature Review

Many studies have been conducted in the realm of entrepreneurship and innovation. For example, Al-Hamali and Al-Arabi (2016) executed a study to identify the reality of entrepreneurship culture and its efficiency at Hail University from the academic staff's point of view. The main findings showed the highly necessity of setting obvious policies and goals about entrepreneurship in the university in plus to the fragility of the entrepreneurship unit. Recommendations of the study were to provide entrepreneurship materials and to investor more time and effort in the entrepreneurship unit so that the latter can effectively raise the awareness of teachers and students at the university of its programs and plans. The study also recommended to create a holistic plan at the university with the participation of all concerned facultiesand to put more efforts in order to prompt the entrepreneurship through scientific and social activities at the university. In a similar way, Olorundare and Kayode (2014) conducted a study entitled Entrepreneurship Education in Nigerian Universities, was carried out to explore the impact of entrepreneurship on graduates of Nigerian universities. Findings revealed that Nigerian Universities encounter many challenges such as the lack of entrepreneurship culture among academic staff members, the difficulty of developing and teaching entrepreneurship courses and the scarcity of qualified trainers in the field of entrepreneurship and innovation. Furthermore, the study suggested a model of developing collaboration between the private and public sectors through entrepreneurship in education at Nigerian universities so as to bring a national change in the Nigerian economy. In the same fashion, Teerijoki and Murdock (2014) conducted a study to assess the impact of the Danish training

program within three universities in Denmark. The program was aiming to disseminate the concept of entrepreneurship among academics and provide them with entrepreneurial skills, methods and techniques, thereby, they can teach entrepreneurship to students through various instructional activities. Findings demonstrated that the program positively influenced the academic staff's perception and attitude towards entrepreneurship. In addition, (Varblane and Mets, 2010) did a study in Post-Communist European Countries. It looked at the level of entrepreneurship education in European countries that was experiencing post-communist transition in order to identify the main trends and best practices of entrepreneurship education in 22 European countries during the economic development transition. The study concluded that Croatia and Slovenia were the two leading countries in terms of including entrepreneurial materials and activities concerning entrepreneurship in curricula and programs taught at universities and colleges, followed by the Baltic States and the Czech and Slovak Republics. Furthermore, the results found that entrepreneurship is taught theoretically and the practical applications are somehow limited. Moreover, it was also found that the number of entrepreneurship centers in the region is relatively few.

This paper contributes to the context of entrepreneurship and innovation field by exploring and identifying the problems in this field in Libyan HES. The remainder of this paper is structured as follows: Chapter II highlights the philosophy, concept and historical stages of entrepreneurship. Chapter III devoted to results and discussion. While chapter IV concludes the results and recommendations.

II. Philosophy, Concept and Historical Evolving of Entrepreneurship and Innovation

The concept of entrepreneurship was presented as the driver of the economic growth, business success and market development, according to the term of the political economy philosopher Joseph Schumpeter (creative destruction), introducing new ideas, modern methods and models and new products depending on Individual entrepreneurs (Josef Schumpeter, 1934). Traditionally, new model emerged known as small and medium-sized companies (SMEs) (Beck et al, 2005) and this model advocated many countries to espouse national and regional economic policies that enhance the establishment of SMEs (Fischer and Nijkamp, 1988; Sternberg, 2012). In Fact, many of these policies and attempts failed to convert this model into a sustainable economic system because it is believed that SMEs are an economic activity that relies exclusively on narrowing groups of ambitious entrepreneurs (Wong et al, 2009, 2011; Stam et al, 2005) and this is considered incorrect interpretation of the entrepreneurial model. For instance (Carland et al., 1984) stated that,

> Although there is an overlap between entrepreneurial firms and small business firms, they aredifferent entities (Carland et al., 1984, 354).

According to the modern conception of entrepreneurship, entrepreneurs are defined as individuals who have entrepreneurial mindsets, introduce new ideas, and explore promising opportunities and new markets by which they can establish new businesses, create innovate solutions, invest resources, establish ventures, network with stakeholders and accept failure that result in creating a new environmental concept called "Entrepreneurship Ecosystem" (Josef Schumpeter and Peter Drucker, 1934, 1985). This new model adopted by most OECD countries as the policies of the Entrepreneurship Ecosystem have been considered as the driver of economic growth and the major tool of intellectual and social transformation towards the knowledge economy (Isenberg, D. J. 2010; Drucker, P. F. 1985). It is a business system consisting of a harmonious group of interconnected elements that work systemically to produce entrepreneurship atmosphere, enhance and increase opportunities of innovation among both individuals and organizationsto produce a new value in society (Isenberg, D. J. 2010).

Until the end of the 1970s, the classical growth models disregarded entrepreneurship and removed its characteristics related to knowledge; considering knowledge as an external factor. Nevertheless, with the passage of time, the current growth models have reintroduced the concept of entrepreneurship as the driver for the growth of knowledge economy. So, the society's ability to increase its capital and well- being over time fundamentally relies on its capability of developing, utilizing and disseminating knowledge and transforming it into economic value which, in return, achieves economic development. The most prominent phase in the development of mankind was preceded by discontinuous or constant increases of knowledge and technical progress. After each stage of knowledge development, it was found that economic development is characterized by uncertainty, new market experiences, redistribution of capital, and the emergence of new structures and industries. This pattern reflected the development that occurred during the 1st and 2nd industrial revolutions in the 18th and 19th centuries and it has been also considered a prominent feature of the 3rd information revolution and the 4th industrial revolution (Klaus, 2016).

Knowledge plays increasingly a key role in economic and social development across history. It has also become the active force in developed economies, while our understanding of how knowledge formed,

generated, disseminated and transformed into a growing knowledge economy is still fragmented and weak in developing countries ( ). Our role in knowledge investment is still restricted to the use of traditional methods of education at all levels or by importing technology as integrated units and operating them without the ability to maintain and develop this technology. Developing countries consider that knowledge are a commodity that can be imported like any technical product and ignore that knowledge is an intellectual product that basically depends on the ability of individuals to produce it, regardless of their gender, color, race and religion. On one hand, development of knowledge is the outcome of fruitful cooperation done thought sharing, education, creation, innovation and scientific research. On the one hand, how to convert it into economic and social value by developing entrepreneurial skills to apply the cumulative knowledge of society, which is the missing code that we could not decipher as we were unable to create the appropriate knowledge and research environment to empower Libyan professors and researchers who studied at the most universal universities and knowledge centers to be able to invest their knowledge in developing the role of the Libyan University as a leading institution for knowledge and technology production alike.

By assessing the knowledge growth in Libya, it is found that the concept of entrepreneurship in Libya is not up to date and needs to be enhanced. It is moreover found that there are no strategies or policies that ensure knowledge production or keep pace with knowledge and technological development in the world. It is evidently seen the chronological gap of 30-40 years between Libya and the world in the applicationof many educational models, courses, legislations and advanced technological applications (e.g. quality, electronic management, e-learning, electronic payment, e-marketing, intellectual property, the national system for innovation, business incubators and accelerators, Innovation centers, venture finance, crowd funding, social responsibility, social entrepreneurship, social innovation, public-private partnership, technology cities, knowledge parks, industrial cities, smart cities, airports, ports, roads, hospitals, advanced markets, renewable energies, artificial intelligence, data centers , huge data systems, etc.). To clarify the latter, although there are many universities, research centers and technology institutes, in the all Libyan cities, that have more than 500 thousand students (intellectual capital), more than 25000 professors with international education background (knowledge store) and thousands of graduates from universities and higher institutes (prospective professionals) and the availability of advanced laboratories, media and communication networks and electricity services throughout the country (Report on Statistical Indicators for Education in Libya 2018, 2019). Albeit, we are still far behind the realm of entrepreneurship and innovation.

Knowledge economy is a holistic developmental concept (System approach) and the universities or/and the scientific and research elites are not only the responsible for the failure in building the knowledge economy in the country. It is rather the responsibility of policy and decision makers in both the government and the business sector in particular. More generally, it is the responsibility of the whole society in general because wherever the society is, education, healthcare system, development and environment are accomplished.

With the emergence of the concept of intellectual capital and its noticeable role in establishing the knowledge economy in many countries, scholars, policy makers and decision makers' thinking and perception has shifted from focusing on tangible assets to concentrating on intangible assets (Tacit assets). In this respect, the economy depends on raw materials has turned into the economy based on intellectual capital and knowledge, which has been with the beginning of the 21stcentury a crucial turning point in global development. This transformation has caused a cultural, social and economic development and has become the main driver for the global economic competition (Xu & Li, 2019). Entrepreneurship skills, innovation, communication and information technology, and efficient human resource have played a vital role in this transformation by triggering the culture of entrepreneurship in society and integrating it into the economic activities of the country, especially in the educational system. In addition, the aforementioned elements have strengthened the role of universities and research centers to become a producer of knowledge and technology and a major source of inventions and startups.

Prior to discussing the teaching of entrepreneurship in details, it is of great important to know what entrepreneurship is and how it is related to innovation. This salient question has remained unknown in our society and, so far, has not been adequately researched. Thus, entrepreneurship and innovation in our society is still a black hole with ambiguous concepts and it is often viewed as overlapping concepts.

a) Entrepreneurship Concept

The concept of entrepreneurship as a driving force for production, development and change. It was first introduced by the American economist Mark Thornton in his interpretations and introduction of the concept of market economy (Cantillon, 1730). Thornton's explanation of market economy laterled to the formulation of the first complete economic theory known as "The Wealth of Nations" (Smith, 1776). Furthermore, with the beginning of the 18th century, the

French economist, Jean-Baptiste Say, used the term "entrepreneur" which is rooted from a French word "entrepreneur". He defined entrepreneurship as an adventure and effort made to establish a new valued entity in society. The concept of entrepreneurship continued to develop over time and began to spread by the Austrian political economist Joseph Schumpeter (1934) in his book "Capitalism, Democracy and Socialism". Joseph pointed out that an entrepreneur has four main characteristics; (1) a creator who introduces a new idea to solve a problem or develop a product; (2) the entrepreneur who is effectively and efficiently marketing this new idea; (3) an investor who take the risks of financing the innovation projects; (4) The manager who makes the decision and undertakes the daily administrative work. More broadly, the entrepreneur is the individual, who has a strong will, thinking and the ability to take risks, lead, make decisions, challenge failure and create valuein society. Drucker (2014) pointed out that entrepreneurship is not an individual or economic activity; it is rather a life-like intellectual system that basically depends on investing individuals' creative and intellectual abilities to invent solutions and create societal value. Such expertise and abilities are not inherited; however, it is life skills and methods of resources management that can be taught to individuals at an early age. Based on this concept, new terms has emerged, namely; Entrepreneurial Thinking, the Entrepreneurial University, the Entrepreneurial Enterprise, the Entrepreneurial State and the Entrepreneurial Society.

According to the Organization of Economic Cooperation and Development (OECD) report, "Enhancing Entrepreneurship", (1983), entrepreneurship is pivotal in the process of economic transformation, while entrepreneurs are the leaders of this change. The entrepreneurs can work to accelerate the creation, dissemination and implementation of innovative ideas through efficient use of resources and expanding the economic activity. Furthermore, entrepreneurs not only seek to identify profitable economic opportunities but also set to take risks, challenge failures, develop business performance, create startups, enhance large companies' business and create value in society (Drucker, 2014).

Carlson (1999) presented two explanations for this economic transformation; notably, global competition and the impact of technological progress in the industrialized countries. In this regard, the Regional Entrepreneurship Development Index (REDI, 2013) indicated that the shift from economy based on traditional management to an entrepreneurial economy is one of the most significant challenges faced by advanced economies over the past four decades. This shift was linked to the increasing importance of intangible capital, such as human and intellectual capital employed for wealth creation. The most prominent signs of this transformation were the aggregate use of knowledge as a major driving force for economic growth and as an alternative to physical capital and natural resources. Carlson also individuals, not large corporations, as entrepreneurs who create new knowledge, startups and small businesses that play a dominant role in turning new knowledge into goods and services with economic and social value. He furthermore called for replacing traditional industrial policy and antitrust monopoly laws as well as protecting small business with a broader entrepreneurship policy that aims to establish and improve entrepreneurship ecosystem in general and encourage innovation and business environment of growing startups in particular.

The concept of integrating entrepreneurship in education motivated and enthused makers of economic and development policy and decisions in the last two decades, either in governments or/and international organizations. This concept had a great positive effect on society, such as economic growth, job creation, social harmony, technological development, the development of individuals 'capabilities and skills, improvement of the income levels, increasing the participation of vocational institutions and universitiesin social and economic development and enhancement the services level in societies. On the flip side, embodying the concept of entrepreneurship in education system has brought various challenges due to many reasons such as: the lack of knowledge and resources, the inconsistency of stakeholders, the change resistance by academics of this trend, the absence of the integrative relationship between educational institutions and society that contribute to the success of this initiative in education to name but few.

When discussing the idea of entrepreneurship in education, it is found that the concept is very different from what many officials or/and professors think; some of them see the concept on integrating entrepreneurship in education as teaching entrepreneurship to students so as to establish their startup businesses. Nonetheless, this view is a rather narrowing definition of entrepreneurship. On the other hand, other professionals and officials interpret entrepreneurship as creating a learning environment that enables students to be more creative and encourages them to identify and seize opportunities and comp up with innovative solutions through self-reliance and risk-taking in order to address the problems affecting their communities. And this is the right interpretation which had a positive influence on the developed countries' economic. In the same line, Peter Drucker, the philosopher of entrepreneurship in the modern era, explained that entrepreneurship is a way of thinking, a concept of management, a leadership style of institutions and it is a fundamental element to the success of any person and organization (Drucker,

2014). In recent years, the definition of entrepreneurship has evolved to cover all aspects of life known as Social Entrepreneurship (Porter & Kramer, 2019).

It is noticed that there are many constraints facing the Libyan education system such as

to align their educational

systems with their overall development strategies.

The misalignment between the absence of a direct relationship between education and the labor market and disqualification of university and vocational institutes' graduates (The global competitiveness report World Economic Forum. 2015). By reviewing the experiences of many countries and participating in many programs and activities, workshops and conferences that were organized within the international support programs to Libya during the years 2013-2020 in the field of entrepreneurship as well as our experience in establishing entrepreneurship since 2005, it is concluded that Entrepreneurship education is a common factor between these different methods and that all students have to be empowered to enhance their personal and cognitive talents and skills to create innovative solutions that add a value in their community and ,thereby students become aware that education is not limited to obtaining a certificate and finding a job. Thus, the core goal of educating entrepreneurship and innovation is to develop citizens' life, professional and creative skills that they increasingly need in this era, regardless of scientific specialization or career choice.

Entrepreneurship comes to the fore in education so far because, from the economic perspective, integrating entrepreneurship in education has well succeeded in improving the efficiency of graduates of higher education in all developed countries (Cera el at, 2020 & Mei el at, 2020). However, entrepreneurship education has encountered major challenges that require more efforts when teaching it at primary and secondary education. As for the third world countries and the Middle East countries, especially North African countries, the matter of entrepreneurship education is still brainstormed and discussed in formally by officials, parents and university professors. In addition, the officials and citizens continuously criticize the educational system when compared to international educational systems, especially at the university level related to labor market and scientific research.

Entrepreneurship in education is very important and exhilarating as it makes a radical shift at all levels of education. It also plays a crucial role in inspiring and motivating students and professors alike to unleash their intellectual abilities and latent skills (Tacit Knowledge) as well as making a fruitful interaction that would definitely lead to development of their societies and engage them them in deep learning (Mittal & Raghuvaran, 2021). Therefore, this study looks at the significance of including entrepreneurship in education and the necessity of doing this integration gradually so as not to underrate its value and becomes a routine subject. It is important to place a focus on success and failure factors that must be considered and developed gradually over time in the education system.

The key factor in the success of entrepreneurship education is to implement effective methods that get students motivated and involved in creating solutions and producing unique values for their communities based on the knowledge and skills they acquire. This consequently motivates both professors and students to use practical learning methods and techniques rather than passive learning. Moreover, this type of education will create an active leaning environment by which students have a strong interest, build a competence that enables entrepreneurial students to pursue elective training programs that aim to develop students' entrepreneurial mindset to building their start-up companies.

Launching entrepreneurship education is theoretically easy to achieve. However, in fact, it is practically challenging as it is related to early socialization rather than traditional education. It is possible to begin at an early age with a broad definition of entrepreneurship and embedded in the curriculum and relevant to all disciplines; preferably, at primary and middle school grades. This can be accomplished through enabling pupils to work at home or on the farm, assisting their parents and training them to work in groups to do homework and project based learning (PBL). Entrepreneurship education is also achieved by including concepts of entrepreneurship and its applications in some course materials and school activities (e.g. school competitions and student camps and innovation clubs) that ensure teaching entrepreneurial thinking. Such activities are established and held at all educational and social institutions and they may operate within a parallel voluntary framework that focuses on activities of social, economic and environmental value.

All of this may be theoretically explained; however, practically, the inclusion of entrepreneurship in education activities and programs at the public and higher educational institutions realistically does not exist, except for some individual initiatives that focus on educating students how to establish and start businesses. The initiatives' materials is not a part of curricula and do not provide students with skills and experiences required to convert knowledge into economic value, to find out the solutions to society's problems and to meet the labor market's need.

The development of students' entrepreneurial skills is perhaps the most difficult and critical issue in this matter. Many researchers argue that the only efficient way that makes people competent in entrepreneurship is through learning by practical and creative education. In addition, most researchers agreed

that engaging students to work in multidisciplinary teams and helping them to interact with people outside the school or university is an effective way to develop entrepreneurial competencies among students. However, if this type of experiential learning based activities is to be categorized as an entrepreneurial method, then some kind of value must be created for people outside the university in the process and it is not adequate to interact with external stakeholders without clear social and development value. Specifically, In order for this approach to succeed, teachers have to rely on entrepreneurship education in which many educational tools and methods that aim to create a societal value.

III. Practical Framework

a) Research Design and Data Collection Tools

The researchers used the descriptive analytical research design to investigate the research topic. As a data collection tool, they designed questionnaire to gather the required data about the study problem. The questionnaire falls into five themes based on the Likert scale. Each theme is divided into a set of statements based on the theoretical part of this study.

b) Study Population

The study population was represented by academic staff members in the faculties of economics and engineering at the universities of Tripoli, Zawia, Gharyan, Tobruk, and Sabratha. The researchers targeted engineering and economics departments at the mentioned universities because the majors of engineering and economics are highly relevant to entrepreneurship and innovation. The questionnaire was distributed electronically via e-mail, the website, and the target universities' social media pages. The number of completed questionnaires was 295 (see table 1):

Table 1: Distribution of Study Population according to Universities

No.	University	Number of Questionnaires
1	University of Tripoli	74
2	University of Zawia	83
3	University of Gharyan	50
4	University of Tobruk	33
5	University of Sabratha	55
Total		295

c) Data Encoding

The collected data was encoded by the numerical method (Likert scale) as shown in table 2 below:

Table 2: 5 Point Likert scale

Level of Agreement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Numbering	1	2	3	4	5

As it is shown in table 2, the average level of agreement is (3) and if the mean of the responses to statements is significantly higher than (3), this indicates a high level of agreement. On the other hand, if the mean of the responses to statements is significantly less than (3), this indicates a low level of agreement. Moreover, if the mean of the responses does not differ significantly from (3), it indicates that the level of agreement is medium. The Statistical Package for the Social Sciences (SPSS) was used in analyzing the data. The results obtained from the data analysis process are as follow:

IV. Results and Discussion

a) Cronbach's alpha (α) test results for validity and reliability

Cronbach's alpha test (α) is a statistical test that measure internal consistency (reliability) of the samples' responses to Likert questions in the questionnaire. It is used to ensure that the result is reliable. More specifically, When the values of Cronbach's alpha coefficient are greater than (60%), it indicates that there is a high internal reliability in the responses to the questionnaire statements and, thereby, the researchers

can rely on the data collection tool (questionnaire) and its responses to achieve the study objectives. Table 3 shows the values of Cronbach's alpha coefficients (α) and the consistency coefficients' values were all greater than (80%).That is, there is an internal reliability in the responses to the questionnaire themes and, thereby, the researchers can rely on these responses to achieve the study objectives and analyze the study results.

Table 3: Cronbach's alpha test results for validity and reliability

No.	Themes	Alpha Coefficient	Consistency Coefficient
1	*Theme I:* The reality of entrepreneurship and innovation (academic staff members).	82%	90.7%
2	*Theme II:* The reality of entrepreneurship and innovation (curricula).	85.4%	92.4%
3	*Theme III:* The reality of Entrepreneurship and Innovation (administrative organization)	86 %	% 92.8%
4	*Theme IV:* The reality of entrepreneurship and innovation (the academics' attitudes in higher education institutions to adopt the concepts and strategies of entrepreneurship and innovation).	92 %	% 96%
5	*Theme V:* the reality of entrepreneurship and innovation (technical and financial support)	81 %	90 %
The mean of Cronbach's alpha test's results for all study themes		85.4 %	92.4 %

b) Characteristics of Study Samples

The respondents of this study were academic staff members in the faculties of economics and engineering at the universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha. Figure 1 shows the percentage of responses from each university.

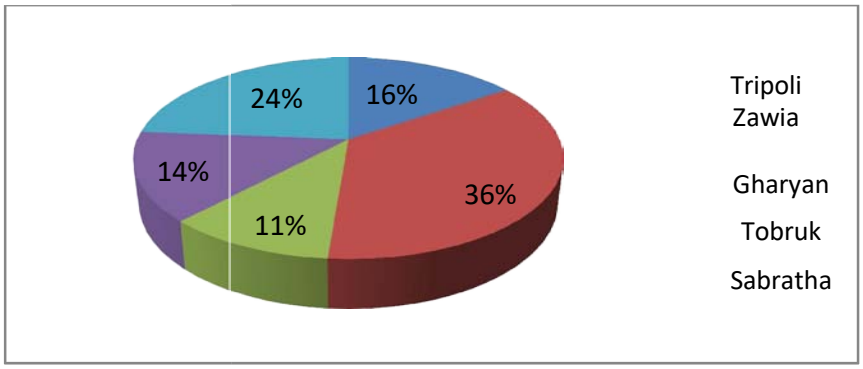

Figure 1: Distribution of the responses among the study sample according to universities

The percentage of male respondents in the study sample was 67%, while the percentage of female respondents was only 23% (see Figure 2).

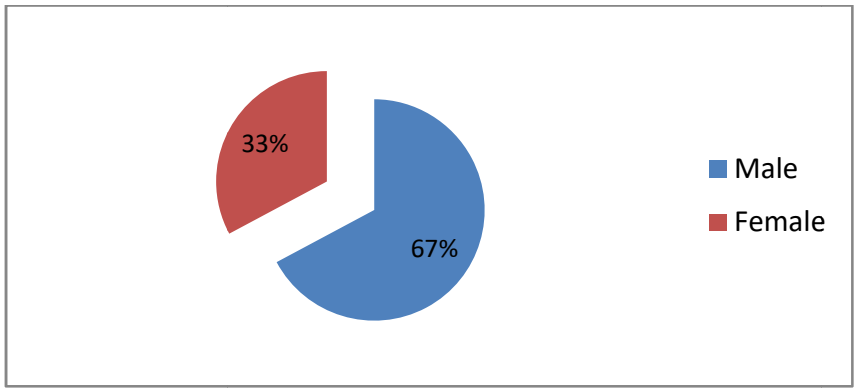

Figure 2: Distribution of the study sample by sex

In addition, Academics with PhD and M.Sc. took part in the study with equal percentage ofapproximately 50% for both (see Figure 3).

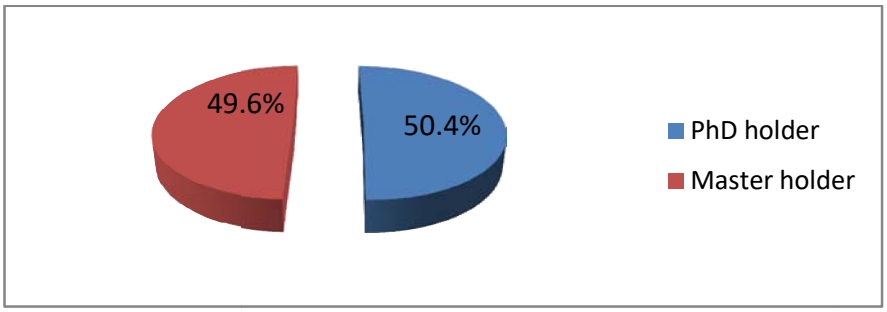

Figure 3: Distribution of the study sample according to the scientific degree

c) *Test of Study Hypotheses*

i. *Hypothesis 1:* Low awareness of entrepreneurship and innovation among academics

The culture of entrepreneurship and innovation among academic staff members is a crucial variable for this field. The following table demonstrates to what extent the study sample is aware of entrepreneurship and innovation field.

Table 4: Results of the t-test of questionnaire statement on the reality of the culture of entrepreneurship and innovation

No.	Statement	Mean	Mean Percentage	S. D	Significance Level	Ranking
1	You are well knowledgeable of the concept of entrepreneurship and innovation.	3.70	0.74	0.85	0.000	1
2	You are well aware of some terminology related to entrepreneurship and innovation (e.g. entrepreneurial ideas, entrepreneurial opportunities, business models, design thinking, start-ups, venture finance, crowd funding, social entrepreneurship, social innovation, entrepreneurial university).	3.35	0.67	1.08	0.000	2
3	You have a good knowledge of interactions between academia (the university), industry and government to boost economic and Social development (Triple helix).	3.23	0.65	0.95	0.005	3
4	You have participated in several scientific meetings and awareness programs on entrepreneurship and innovation (e.g. workshops - conferences - seminars -competitions).	2.97	0.59	1.13	0.763	4
5	You have contributions/participations in the activitiesof the Global Entrepreneurship and Innovation Week.	2.41	0.48	1.07	0.000	6
6	I have published, at least, one scientific paper on entrepreneurship and innovation.	2.24	0.45	1.29	0.000	7
7	You motivate and supervise students' graduation projects in the field of entrepreneurship and innovation.	2.70	0.54	1.14	0.003	5
Dimension 1: Academic staff members.		**2.94**	**0.59**	**1.07**	**0.110**	**2**

Table 4 reveals that the calculated significance of the all responses to the statements of this theme is <(0.05) with the exception of the fourth statement. It is also noticed that the level of agreement is high for the first three statements, so we reject the null hypotheses for the first three statements and accept the alternative hypothesis. That is, the study sample showed that the academic staff members is familiar with the concept of entrepreneurship and innovation as well as some concepts related to this topic such as entrepreneurial opportunities, venture financing, social entrepreneurship, social innovation, in addition to their enjoyment of a good level of knowledge of the pillars of the knowledge-based economy, government,

university and business sector (Triple helix). On the other hand, the rest of the responses to the statement showed different levels of disagreement and this indicates the academic staff members do not participate in entrepreneurship activities, do not publish research papers in the field of entrepreneurship and innovation, and do not motivate and supervise students graduation projects in this field.

ii. *Hypothesis 2:* Lack of the curricula of entrepreneurship and innovation

The Curricula of Entrepreneurship plays an essential role in developing practices related to entrepreneurship and innovation. Table 5 demonstrates the availability of entrepreneurial courses and topics in the curricula.

Table 5: The results of the t-test of the study sample's responses related to curricula

No.	Statement	Mean	Mean Percentage	S. D	SignificanceLevel	Ranking
1	Entrepreneurship and innovation course is taught at your institution.	2.52	0.50	1.10	.000	6
2	There are topics related to entrepreneurship and innovation within the courses taught at your institution.	2.78	0.56	1.26	.010	3
3	There are courses related to entrepreneurship and innovation at your department.	2.41	0.48	1.01	.000	7
4	There are topics related to entrepreneurship and innovation within the courses taught at your department.	2.65	0.53	1.14	.000	4
5	You have scientific sources and references related to entrepreneurship and innovation.	2.63	0.53	1.11	.000	5
6	Your teaching method aims to provide students with scientific knowledge and practical skills in the field of entrepreneurship and innovation.	3.24	0.65	1.18	.002	2
7	Your institution encourages the development of curricula so that it contains theoretical and practical activities, with the aim of motivating and developing students' entrepreneurial and innovative thinking and skills (e.g. case studies or practical field research to find solutions to existing problems or develop new services).	3.33	0.67	1.31	.000	1
Dimension 2: Curricula		2.79	0.56	1.16	0.000	3

It is clearly noticed from table 5 that the calculated significance of the all responses to the statements of theme 2 is <the level of significance (0.05). It is also seen that the level of agreement to this theme is generally low. Therefore, we accept the null hypothesis for the first five statements and this is evident that there is lack in courses or/and topics within the curricula taught at the target universities. In addition, the results showed that there is a lack of scientific sources and references in this field. On the other hand, the level of agreement to the responses of in the last two statements was high with a calculated significance < the significance level (0.05). That is, academic staff member suse teaching methods that aim to provide

students with scientific knowledge and practical skills and their institutions encourage them to develop curricula in the field of entrepreneurship and innovation.

iii. *Hypothesis 3:* Weakness of administrative organization of entrepreneurship and innovation

Administrative organization plays a significant role in creating an entrepreneurial and innovation atmosphere in terms of deploying the required policies and creating plans that ensure entrepreneurship and innovation at the educational institutions. Table 6 shows the result of this theme.

Table 6: The results of the t-test of the study sample's responses related to the administrative organization

No.	Statement	Mean	Mean Percentage	Standard Deviation	Significance Level	Ranking
1	Entrepreneurship and innovation are considered and essential part of the educational institution's strategy (vision - mission - goals).	3.58	0.72	1.12	.000	1
2	Your institution has a department dedicated to organizing and monitoring entrepreneurship and innovation activities.	2.79	0.56	1.14	.005	2
3	Your organization has a department specialized in the field of entrepreneurship and innovation.	2.64	0.53	1.07	.000	5
4	Your department has a division specialized in the field of entrepreneurship and innovation.	2.30	0.46	0.95	.000	7
5	There is an award for entrepreneurship and innovation, either for students or academics, at your educational institution.	2.50	0.50	1.05	.000	6
6	Your institution has a business incubator or/and a center of entrepreneurship and innovation.	2.87	0.57	1.22	.107	3
7	Your department has cooperation with stakeholders in the field of entrepreneurship and innovation (Business and Accelerators).	2.69	0.54	1.13	.000	4
Dimension 3: administrative organization		**2.77**	**0.55**	**1.10**	**0.02**	**3**

As it can be seen from Table 6, the mean of the all responses to the statements of theme 3 equals (2.77), which is less than average scale. i.e., 3, with a calculated significance of 0.02. Hence, the null hypothesis is accepted and the alternative hypothesis is rejected. This result indicates that the administrative organization, at the targeted universities, is generally neglected in the sampled study.

iv. *Hypothesis 4:* Faculty members have positive attitudes to adopt the concepts and strategies of entrepreneurship and innovation

The following table shows to what extent academic staff members, at the targeted universities, are likely to drown in the field of leadership and innovation.

Table 7: The results of t-test of the study sample's responses related to the statements related to the academics' attitude to adopt the concepts and strategies of entrepreneurship and innovation.

No.	Statement	Mean	Mean Percentage	S.D	Significance Level	Ranking
1	You have the desire to develop knowledge and professional skills in the field of entrepreneurship and innovation.	4.38	0.88	0.72	.000	4
2	You have the desire to improve the curriculum in compatible with entrepreneurship and innovation strategies.	4.41	0.88	0.72	.000	2

3	You have the desire to motivate and supervise students' innovative research projects.	4.39	0.88	0.75	.000	3
4	You are keen to change the teaching-learning methodologyies from a theoretical framework to an experiential framework by which the students are engaged in real entrepreneurial learning process.	4.43	0.89	0.72	.000	1
Dimension 4: academic staff members' attitudesto adopt the concepts and strategies of entrepreneur ship and innovation.		**4.40**	**0.88**	**0.73**	**.000**	**1**

Table 7 demonstrates that the mean of the all responses to the statements of theme 4 is (4.73) with a calculated significance less than (0.05). Thus, the alternative hypothesis is accepted. This result indicates that the academic staff members, at the targeted universities, are interested to adopt the concepts and strategies of entrepreneurship and innovation.

v. *Hypothesis 5:* Providing financial and technical support for entrepreneurial and innovative researchprojects

As it can be seen from table 8, the mean of the all responses to the statements of theme 5 is (2.49), which is less than the hypothesized mean (3), with a calculated significance less than (0.05). Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted for this theme. This result shows that the technical and financial support to entrepreneurial and innovative research projects is weak at the targeted universities.

Table 8: The results of the t-test of the study sample's responses to the statements related to financial and technical supportto entrepreneurial and innovative research projects.

No.	Statement	Mean	Mean percentage	S.D	Significance level	Ranking
1	Research and innovation projects are technically supported in your institution.	2.59	0.52	1.07	.000	3
2	Grants are awarded to entrepreneurial and innovative research projects in your institution.	2.34	0.47	1.02	.000	7
3	Businessmen are constantly informed with promising research and innovation projects of the graduates of your institution.	2.44	0.49	0.99	.000	6
4	Banks are urged and recommended to fund promising research and innovation projects of the graduates of your institution.	2.56	0.51	2.92	.023	4
5	The municipalities are urged to support the promising research and innovation projects of the graduates of your institution.	2.51	2.51	1.05	.000	5
6	Entrepreneurship competitions are held annually or periodically.	2.78	0.56	1.09	.002	1
7	Prizes and incentives are awarded to outstanding entrepreneurial projects.	2.70	0.54	1.13	.000	2
Dimension 5: Financial and Technical Support		**2.56**	**0.51**	**1.32**	**.004**	**5**

d) Summary

Table 9: The results of the t-test on the mean of the all study themes

No.	Statement	Mean	Mean Percentage	S.D	Sig. Level	Ranking
1	Diminution 1: Academic staff members.	2.94	0.59	1.07	.110	2
2	Diminution 2: Curricula	2.79	0.56	1.16	.00	3
3	Diminution 3: administrative organization	2.77	0.55	1.10	.02	4
4	Diminution 4: academic staff members' attitudes to adopt the concepts and strategies of entrepreneurship and innovation.	4.40	0.88	0.73	.000	1
5	Diminution 5: Financial and Technical Support	2.56	0.51	1.32	.004	5

It is noted from Table 9 above that Diminution 1, the academic staff members' attitude to adopt the concepts and strategies of entrepreneurship and innovation, came to the first, which, in return, shed light on the high desire of academics to explore this field. This may be considered a strength point that the higher education policy makers in Libya utilize for the development of entrepreneurship education. Additionally, the responses to the statements showed a level of disagreement to the other diminutions. Accordingly, the higher management in Libyan universities and the Ministry of Higher Education should develop these mentioned areas. That is, raising the capabilities of staff academic, incorporate curricula, adoption of administrative organization policies and technical and financial support to the activities in the field of entrepreneurship and innovation.

V. Conclusion

The purpose of this paper is to discover reality of entrepreneurship and innovation in terms of administrative organization, academic staff, curricula and teaching methodology and support research, in addition to the attitudes of academic staff in order to drow on the entrepreneurship and innovation field in the Libyan HEIs Universities. In particular, faculties of economics and engineering in the universities of Tripoli, Zawia, Gharyan, Tobruk and Sabratha. The results obtained show that many weaknesses area are exist in the field of entrepreneurship and innovation in the sampled study. Namely: (I) academic staff, (II) curricula and teaching methodology, (III) Administrative organization, (IV) supports research. In the flip side, strength point was found is the academics' desire to draw on the entrepreneurship and innovation field as they are quite well knowledgeable in this field. Based on the above conclusions, the researchers provide a cluster of recommendations. First, is to introduce curricula with respect to entrepreneurship and innovation field. Second, to raise the awareness of academics and arm them with the teaching skills by training programs. Third, increase academics' participation in entrepreneurial and innovative activities (e.g. conferences, symposiums, workshops, etc.) and publishing scientific papers. Forth and last, is to mobilize and allocate a specific budget that accomplishes the objectives of entrepreneurship and innovation at Libyan universities.

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The Gold of Peru

By Tomas Ezequiel Gallarday Bocanegra

Resumen- Dentro del territorio peruano existen rocas ígneas, sedimentarias y metamórficas analizadas por dataciones radiométricas U-Pb, Ar –Ar u otros isotopos le dan rango cronológico entre 3 a 1924ma y error de 20a 25ma, ubicadas en Madre de Dios, cordilleras de la costa y de los andes, las rocas están integradas por minerales que contienen elementos metálicos como:

Oro, plata, platino, cobre, plomo, zinc, estaño, molibdeno, antimonio, manganeso, bismuto, mercurio, titanio, litio, vanadio, níquel, cromo cobalto, Wolfromio, hierro etc. Ellos integran cuerpos que tienen diversas geometrías, se formaron juntos o después que el orógeno, por una fuerte acción telúrica, por ello es considerado el Perú un país que tiene muchos elementos metálicos (40), de los cuales solo se explotan 16, que equivale al 99 %.

El Perú es el segundo productor del mundo en cobre, plata y zinc, el cuarto en plomo, molibdeno, sexto en oro y estaño, decimo roca fosfórica. Es considerado muy rico por sus recursos minerales, por ello, debemos informarnos sobre la importancia de éstos y del necesario desarrollo empresarial ligado al mismo.

GJHSS-B Classification: DDC Code: 853 LCC Code: PQ4873.A6934

THEGOLDOFPERU

Strictly as per the compliance and regulations of:

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En la historia económica peruana, la minería ha contribuido a su crecimiento, siendo una fuente importante de ingresos fiscales; pero también ella ha generado diversos conflictos con los pueblos y comunidades.

Las concesiones mineras de las áreas que tienen recursos minerales son otorgadas a CIAS y/o a personas naturales con fines económicos, el costoque se obtienen de la venta de sus minerales aporta un tributo o CANON MINERO, que se utiliza en un 50% para el desarrollo de las regiones en las que se encuentran ubicadas estas concesiones, un 25% para un fondo común repartidos a sus distritos y provincias el 25% restante suma el tesoro público, es por ello que la Constitución y las Leyes tienen que garantizar este principio jurídico, más aun tratándose de una riqueza que es diferente a las actividades empresariales en las que si se produce recursos generadores de riqueza tales como agricultura, ganadería y las industrias en general.

El desarrollo empresarial en minería debe ser apoyado, promovido y difundido en todos sus niveles por los gobiernos de turno, pero bajo los preceptos de crear puestos de trabajo en función de las inversiones realizadas, y que ellas participen en el desarrollo de cada una de las regiones, con el pago de sus regalías y de los impuestos directos que corresponde, los cuales deberán ser fijados con equidad aplicando la legislación vigente.

Mencionamos el oro metálico cuya producción ha experimentado mayor crecimiento en las tres últimas décadas. Por su nuevo marco regulatorio se puso en explotación diversas operaciones auríferas de grandes yacimientos minerales diseminados, como Yanacocha, Alto Chicama, Santa Rosa, Pierina, Sipán, la Zanja, Cerro Corona, Toro Mocho, Quellaveco, La Arena, La Zanja, El Toro y otros, este artículo busca analizar parte de la influencia en nuestra economía por la explotación del oro y su producción en el Perú, que lo convierte en el primero de Latinoamérica y el sexto en el mundo. Un estudio del Servicio Geológico de Estados Unidosmenciona que las reservas de oro ascienden a 13 millones de toneladas 418 millones de onzas, que están en los andes de América del Sur de los cuales 1960 toneladas o 63 millones de onzas finas están en el Perú, se piensa que hay mucho más cifra equivalente a 61´204,800 billones de gramos finos y equivalen al 4% de las reservas existentes en el mundo. A la fecha no existe región natural en el Perú que no posea yacimientos con oro. Otro estudio de la UP (2013) menciona que lo recaudable para el Perúes de 12110 millones de dólares para el 2024 y 5353 millones de dólares para gobiernos regionales por canon y regalías.

Por lo citado, es necesario formar conciencia no solo entre los académicos interesados en la minería, sino también en la ciudadanía en general, así como también sobre la necesidad de una explotación minera responsable y sustentable en la que se utilicen los recursos naturales de manera conservadora buscando siempre nuevas y modernos métodos de explotación; en paralelo realizar un minucioso control y prevención de la contaminación, no debe soslayarse la conservación del paisaje topográfico, de allí la importancia de este artículo en el cual el autor vierte parte de su experiencia, que será de utilidad a las personas ligadas a la minería o a quienes quieran ampliar sus conocimientos sobre el tema.

I. Introduccion

El notorio incremento de la producción aurífera en el Perú en las tres últimas décadas y el inicio de la presente, donde la producción de oro ha pasado de 20.179tmf. Año 1990 a 140.210tmf. Año 2018, 128.413tmf. Año 2019 y 120tmf año 2020 a pesar de la pandemia mundial por el COVID-19. Su equivalente en dólares también ha cambiado de 232.058 millones de dólares en el año 1990 (11.5 $/gr). Subió a 706536.960 millones de dólares año 2010 (38.4$/gr). Para obtener estas cifras numéricas se ha consideradoel valor 1171.2 Dólares/onza troy = 31.1 gramos (MEM), año 2011 la producción fue de 164tmf, que produjo un canon minero de $ 1,142 millones, año 2020 precio onza $ 2067 que dio $ 3´858,480 millones, las cifras que anteceden no incluyen a la minería informal y artesanal, ellas fueron las que despertaron al autor estructurar un trabajo plasmado en este artículo, con el único afán de contribuir en algo a los amigos lectores que deseen conocer, ampliar o recordar sus conocimientos sobre el

Author: e-mail: tgallardayb@unmsm.edu.pe

metal aurífero, es a ellos que les agradezco por anticipado. Así mismo les pido una disculpa por los errores que encuentren en este extenso, al que hemos tratado de aportarle en forma resumida la máxima información de lo que yase ha publicado sobre el oro a la fecha.

Nuestra experiencia académica y profesional nos ha permitido revisar, analizar, resumir así como estudiar parte de muchos libros de investigación científica y hemos verificado que todos ellos como este artículo, no son elproducto del trabajo de un solo autor, más bien reportan a cientos de investigadores que se abocaron al estudio del oro, muchos de ellos pasaron la mayor parte de su vida en el campo y en el laboratorio es por ello que al enfocar sus diferentes puntos de vista y más aún sus convicciones que han sido plasmadas en sus trabajos sobre el oro, los cuales ya existen publicados en diferentes medios de comunicación, tales como periódicos, revistas, libros, unidades magnetofónicas e información diversa que se encuentra colgada en internet para ellos un agradecimiento.

Los criterios que tratan de explicar la presencia del oro dentro de la cortezaterrestre es diversa, procede del magma, o de algunos planetas del espacio que se disgregaron estrellándose en la superficie de la tierra y desprendiendo mucha energía generadora de oro, como se evidencio por las explosiones nucleares y que son dadas dentro de este trabajo, en sí sonsolo pautas sencillas simples y más aún pueden ser entendidos de maneraràpida por el lector. Pero eso sí, indicamos con toda seguridad que este trabajo les servirá en algo a los cateadores, prospectores, exploradores que con su incisivo trabajo diario tratan de descubrir un nuevo yacimiento de oro ubicado dentro del territorio peruano para explotarse en el futuro.

La literatura existente en la actualidad sobre el oro es muy basta, más aún con rápido incremento yendo desde la simple a la más compleja, como es su origen paralelo al origen de la tierra y la luna 4550 y 4527ma que incluyen bombardeo de meteoritos 4000ma, empieza photosynthesis 3500ma, presentarse la atmosfera, oxígeno, hielo 2300ma, 750 a 640ma segunda glaciación de la tierra, compartiendo nuestra columna estratigráfica Precámbrica, Paleozoica, Mesozoica, Cenozoica, con sus eventos tectónicos que sucedieron por la dinámica de las placas, Nazca que subduce a la Americana (Brasileña compresiva, Eoherciniana compresiva, Tardiherciniana tensional, Finherciniana tensional, Fase peruana [Inca I tensional, Inca II compresional, Inca III tensional, Quechua I tensional, Quechua II compresional, Quechua III tensional], se piensa que todas estas fases que originaron estructuras geológicas permitieron el alojamiento desoluciones mineralizantes con presencia de oro.

Este trabajo es la base para sus futuras lecturas sobre el oro, ella agudiza el espíritu crítico, refuerza la autonomía de juicio. Educa el sentimiento estético, nutre la fantasía, ensancha la imaginación, habla a la efectividad, cultiva los sentimientos, descubre nuestros intereses haciéndolo más amplios y autónomos, contribuye a la promoción de una sólida conciencia moral y cívica, abre los ideales de nuestra comprensión humana, resaltando la solidaridad por coadyuvar a la formación de nuestro ego, suma conocimientos sobre el oro.

El autor de este articulo lo ha trabajado desde el año 2018, para publicarlo en una revista indexada a Scopus, se considera los grandes avances en la exploración del oro en el Perú, nuevos criterios o herramientas que permiten al geólogo perfeccionar los métodos directos e indirectos que usan cateadores, prospectores, exploradores para la búsqueda del oro estos son:

Modernos detectores de oro, los GPS (sistema de posicionamiento global) de alta precisión como el GPSMAP r 66s, Trimble 4800 -5800 analizadores marca PIMA y TERASPEC (analizador portátil de rayos fluorescentes XRF), fabricación de lupas de 100 aumentos, lápices imanados con grabadoras y filmadoras, Pistolas de exploración geoquímica, cámaras digitales con gran zoom que permite ampliar la toma de fotos en puntos de interés de lasmuestras de roca, perfeccionamiento y rapidez en los análisis geoquímicos, petrológicos, pruebas al fuego realizados por los laboratorios como SGS-Perú, ALSCHEMEC, Áurica, Química Germana, Plenge y otros, uso del Prima100 – FWD (Deflectómetro de Impacto Portátil) instrumento para determinar el empaque del subsuelo, avance de la Geoquímica, IP. (Polarización Inducida) Magnetometría, fotos satelitales, sensores remotos, información dada a través de fibra óptica en amplias autopistas de Internet, Planos a falso color, programas o software, memorias (USB), apoyo de internet estático y portátil, ordenadores de datos tipo laptop, fotos satelitales dados en programas como Googleearth, Googleearth pro, Googlemaps, Geocatmin, sidemcat ingemmet, kitco Gold, drones etc. Su aplicación ha permitido proyectar y realizar sondajes de perforación diamantina técnicamente sustentados 2200metros deprofundidad (Antamina), tal es así que en el rubro de publicaciones, por cateo, prospección, exploración, explotación, uso del código de Jorc y QA/QC, procesamiento, transporte y comercialización aurífera, ha tenido una acelerada rapidez que para el tiempo en los que se recopiló la primera información necesaria para elaborar este trabajo, ya estaba desfasada, los problemas planteados por la revisión continua dado en el mismo, nos ha permitido mantener el equilibrio entre nuestra inicial recopilación y los nuevos criterios que han surgido en este rubro, que la hemos resuelto en forma parcial, compartiéndolo con equidad. Al final hemos obtenido este artículo, ahora introducimos la historia del oro, uso, producción, los tipos de yacimientos que son los de mayor importancia en aporte aurífero para el Perú, la damos apoyados por cuadros estadísticos, exponemos del medio ambiente el que es impactado por el cateo, prospección, exploración, extracción, tratamiento y transporte de los minerales que contienen oro así como el cierre de las labores mineras de las cuales se extrajo oro.

Recordamos al lector que los conceptos recopilados y vertidos en este trabajo son únicamente una pequeña parte de una etapa muy intensa dadapor la evolución dinámica de nuevos criterios escritos todos los días sobreel oro, la que está integrada por diferentes puntos de vista de otrosgeólogos y personas, que en la mayor de las veces, es el resultado de sus ideas meditadas y maduradas sobre el oro, ellas son las que forman parte del amplio campo del conocimiento humano, por ello hemos previsto que no todos los lectores acepten este trabajo más aún aquellas personas que vienen trabajando toda una vida en la exploración del oro en el Perú. Sin embargo tratamos de dirigir la atención del lector a conceptos generales que siempre serán usados cuando se quiera buscar oro. Así mismo en lasimágenes se menciona la fuente para que el lector la ubique con suma facilidad en artículos, libros, revistas o navegando en internet. Existen diversas formaciones rocosas del Perú, resaltándose la formación Calipuy que es considerada unidad estratigráfica metalotecto muy favorable paraexplorar y buscar oro en el Perú. Esperamos que la continuación del presente objetivo dado en este trabajo sea seguida por otras personas, quecon el uso de los ordenadores de datos, de alta velocidad electrónica, generará nuevos trabajos muy interesantes sobre el oro. Más aún en el presente siglo de la transparencia y las ideas, donde podríamos considerara nuestro planeta tierra que es una única nación dentro del campo del conocimiento humano, así como el empleo de las partículas Boson de Higgs (origen de las partícula elementales) que probablemente permitió cuajar, transmutar y formar el oro metálico, ello nos permite depurar y favorece alcanzar una rápida, acertada, precisa o actualizada información sobre la presencia del oro en el Perú. Los análisis geológicos y juicios razonables surgidos después de nuestras observaciones realizadas en campo, las que coadyuvadas por nuestra experiencia y estudio geológico, estoy seguro que abrirán nuevas puertas a nuevos estudiosos del oro. El autor no puede sustraerse a la deuda que contrae con sus colegas y amigos, cuyas ideas a veces captadas en conversaciones amicales han influido y están diseminadas a lo largo de este artículo.

II. Metodologia

a) "La Exploración Minera de Oro en el Perú"

Una crónica resumida y enumerada de lo que ha sido la exploración mineraen el Perú. Se encuentra en la obra del Ing. Mario Samamé B. En ella los hechos se relatan desde la época del Virreinato. Donde un número elevado de españoles o sus descendientes se dedicaron a la minería, en sus diversas fases o etapas como es el cateo, prospección, exploración, preparación, explotación, concentración, fundición, transporte, venta de concentrados de minerales y metales procedentes de yacimientos tipo filonianos - vetas, o sulfuros con valores de oro.

España dio mucha importancia a la explotación minera en el Perú, actividadque ha quedado evidenciada en los relatos o memorias de los Virreyes. (Manuel de Amat, Juan de Mendoza Marqués de Montesclaros, Francisco de Toledo). Fue Toledo el que dictó las primeras ordenanzas de minería, es importante señalar que en la memoria del virrey Mendoza año 1615. En su capítulo que refiere a los mineros escribió: "asientos mineros formados para extraer plata: Potosí, Pasco, Oruro, Vilcabamba, Castrovirreyna, Nueva Potosí, Carabaya y Laruma donde se extraía oro, Huancavelica que producía azogue (mercurio). Se piensa que la importancia que se lee en lasmemorias del mencionado virrey. Época en la que se daba poca ayuda jurídica a la minería, por ello ésta actividad paso a segundo plano hasta elaño 1750 (Siglo XVIII), fecha en la que los Reyes de España muestran un verdadero interés por la descripción y estudio de diversos distritos mineros de sus colonias en Sud América, por ello que se encuentra en la literatura peruana escritos como el llamado "Derrotero de Monroy" que esun escrito hecho en julio del año 1769 "Representación dirigida al Virreinato del Perú para el restablecimiento del mineral procedente de Castrovirreyna departamento de Huancavelica, fundada porreconocimiento que hizo de ese mineral don Álvaro de Monroy". Este documento contiene una descripción detallada del distrito minero de Castrovirreyna (Monroy, Álvaro, "Representación dirigida al Virreynato delPerú en junio de 1769 para el restablecimiento del mineral de Castrovirreyna en el departamento de Huancavelica".

(Boletín de la Sociedad Geológica del Perú, 1929, núm. 3, pp. 61-83). Posterior a este suceso vino a las colonias españolas una misión presididapor el Barón de Nordenflicht que después de visitar Potosí en el año 1788, paso a Lima en abril del año 1789. Realizó estudios mineros en Cerro de Pasco y otros lugares aledaños, después concentró sus actividades mineras en Hualgayoc Cajamarca.

En los primeros años de la República, no hubo interés de los presidentes del Perú para desarrollar la minería. Dentro en este lapso de tiempo sobresalen científicos como el Dr. Antonio Raimondi con su obra "El Perú" Volumen IV, Minerales del Perú (1878–1880), y Mariano de Rivero y Ustárizlos dos publicaron libros de mucho interés, en los que se describían con detalle las riquezas minerales del Perú.

El Ing. Eduardo Juan de Habich (Edward J. Habich), es quien en el año 1876 funda la Escuela de Ingenieros del Perú, de ella egresan varios grupos de ingenieros de minas con nuevas ideas y mucha capacidad técnica, son quienes comienzan la explotación de minerales en el Perú. Ellos ya estaban seguros que el Perú para beneficiarse y desarrollarse podría hacerlo con sus recursos minerales, por lo tanto era necesario conocerlos cualitativamente y

cuantitativamente. Primero debería conocerse, para después, extraerlos y venderlo a los países europeos.

En el año 1902 se funda el Cuerpo de Ingenieros de Minas, institución queinicia la publicación de monografías e informes. Ellas contienen temas que tratan sobre distintos sectores geográficos de nuestro territorio. Los Ingenieros. C. Lisson "los Fosfatos de Ocucaje", Fuchs, Bravo, Málaga Santolalla "La mina de Consuso", Dueñas, Balta, Denegrí y muchos otros figuran como autores de estos interesantes y valiosos estudios.

La Sociedad Geológica del Perú es fundada en el año 1924, ella aporta y difunde los conocimientos de la geología del Perú en sus boletines ya finalizados de los 501 cuadrángulos a escala 1/100000 y parcialmente de lacosta y del orógeno a escala 1/5000. Hecho similar se da en las colecciones de Boletines del Cuerpo de Ingenieros de Minas del Perú, ambas fuentes literarias constituyen dos valiosos aportes de información, suman a ella los lectores interesados en conocer la historia de muchos de nuestros yacimientos de minerales.

Todas las descripciones geológicas que en los boletines se encuentran pueden parecer en el presente desactualizadas. Sin embargo tienen observaciones interesantes que sucedieron y aun pasando ahora desapercibidas nos podrían servir para obtener actualizada la evolución geológica, como el particular caso del retroceso de los glaciares, fuertes procesos geodinámicos originados por diversos niños y acciones de diferentes sucesos sísmicos son los que cambiaron la geomorfología actual del Perú (sismo 1970 desapareció la ciudad de Yungay).

El Código de Minería del año 1950 que se promulga en el Perú, contribuye a darle mucha importancia a la actividad minera. Por ejemplo con su aplicación y respaldo se incrementan las operaciones mineras, se desarrollan nuevos proyectos mineros, a los proyectos ya existentes. Se suman nuevas operaciones mineras y se da inicio a la exploración de nuevos prospectos mineros. Muchos de ellos son los ya descritos en los citados boletines.

Es así, como se demostró la importancia del estudio de los minerales en elPerú. Por ejemplo, fueron conocidos los yacimientos de minerales de Antamina, Marcona, las Bambas, La Granja y Tintaya, los Fraylones (Conga Yanacocha), el molino (ahora Santa Rosa), Por aquella época también se descubrió y describió el yacimiento de minerales de cobre en Cuajone.

Algunos expertos mineros consideran que el aumento de la producción de minerales fue favorecido dentro del Perú, por el Código de Minería del año 1950 que promovió el Ing. Mario Samamé B.

El Código de Minería también dio impulso a la exploración minera, trabajos realizados en este rubro demostraron la presencia de importantes yacimientos de minerales, aún por explorar y para luego en el futuro explotarlos, como es que al transcurrir el tiempo este lo ha demostrado, pues se ha puesto en producción los mencionados yacimientos de minerales.

El Código de Minería del año 1950 estuvo en vigencia por corto tiempo (dos décadas), se promulgaron nueva jurisprudencia minera, se hicieron recortes a sus actividades promocionales, manteniendo solo el artículo que establecía los contratos de estabilidad tributaria para la minería, al amparo de dicho artículo se firmó el contrato de Cuajone al inicio de la década de 1970.

Este hecho fue el último contrato, firmado al amparo del Código de Minería de 1950 acto que conllevo a su finalización por la falta de su aplicabilidad. Luego transcurrieron 20 años con marcado nacionalismo estatal, que expropio a la gran minería (Cerro de Pasco Co. Marcona Mining Co.,Northern Perú Mining Co.) con excepción de Santa Luisa con su mina Huanzalá, Southern Perú Copper Corporation, operadora de Toquepala y Cuajone.

En el año 1990 es revisada la legislación minera peruana, y se inician los programas de privatizaciones, es lograda la estabilización de la economía peruana, que era precedida por una inflación de más de 7000 % por año. Los hechos realizados crearon condiciones favorables para la inversión minera en el Perú, muy similar a la que hubo en los años 50.

En el año 1992 Cía. de Minas Buenaventura, asociada con Bureau y Newmont Mining Co., logró poner en producción el yacimiento epitermal de Yanacocha que inicialmente fue explorada en la década de 1965 por la CIA Minerales Santander INC. Con los Geólogos N Sirvas y J.Villanueva en lostrabajos incluso se hicieron algunos sondajes en la zona de Maqui Maqui, sin embargo desecharon el área, la que fue peticionada por M. Carassai B, con nombre de los Fraylones, a su deceso revirtió al Estado para ser peticionada por SEDIMIN 4000 has para exploración de plata, con el Geólogo J. Paredes P, luego en 1982 se firmó un contrato Joint Venture entre minera SEDIMIN 40%, minera NEWMAN 40% y minas BUENAVENTURA 20% quienes siguieron la exploración intensamente.

El hecho fue de impacto positivo tan grande que despertó y favoreció una intensa labor exploratoria en todo el territorio peruano que culminó con descubrimientos de yacimientos de minerales de oro importantes, como Sipán, La Arena y Pierina, A este período de exploración el diario El Mundo Minero lo refirió como un Boom de exploración minera en el Perú.

En este periodo el estado concentró su acción en la regulación y supervisión de la actividad minera a la vez que, a través del Instituto de Geología, Minería y Metalurgia (INGEMMET), logró completar el mapa Geológico del Perú a escala 1:100,000 (logro de ello el Perú tiene ya sus 501 cartas geológicas), que es un valioso aporte de información para desarrollar la actividad minera aurífera y demás metales como, plata, cobre, plomo zinc, estaño, fierro, manganeso, wolframio,

antimonio, el oro se encuentra presente en todos los yacimientos o cuerpos mineralizados talescomo:

Filones o vetas o está presente en cuerpos irregulares (ore bady), mantos, pórfidos cu, oro, diseminados, IOCG, VSM, orogénicos de Au (Cu- Zn- Pb),epitermales de baja, media y alta sulfuraciòn, como subproducto en minerales de sulfuros metálicos, skarn, pórfidos de cu-mo, cu-w, nódulos de manganeso, aventaderos, arenas u placeres de oro que en el van desde Ordovícico hasta fin del Neógeno, en el rango 255.5ma al Holoceno 10,000 años habiendo estado sujeto a los ciclos orogénicos dados por las estructuras compresivas de la Tectònica Eoherciniana, a las estructuras tensionales Tectónica Tardiherciana y fin Herciniana (48.1ma), así como a las estructura compresionales Tectónica fase peruana, Inca II, Quechua II, Quechua III, y las tensionales Inca I, Inca III Y Quechua I en el rango 237.1ma – 8.92ma.

El empleo de nuevos instrumentos Geodésicos (GPS, PIMAS, pistolas de análisis geoquímicos, microscopios de alta resolución, lapiceros imanados, software, cartas satelitales, cámaras fotográficas y filmadoras digitales, ordenadores de datos portátiles, internet estático y portátil, teléfonos satelitales, cartas de anomalías geofísicas, etc.) y la nuevas tecnologías Geofísicas y de IP. Aplicadas en campo o gabinete han contribuido mucho en el descubrimiento de nuevos yacimientos de oro epitermal, como Río Blanco, Alto Chicàmac, La Rueca, El Toro, La Arena, La Tía, La Conga, La Carpa, El Galeno, Santa Rosa etc. Es por ello que los mineros peruanos, se capacitan cada vez más con el uso de estas nuevastécnicas, por ejemplo en el rubro de las imágenes satelitales, geofísica, geoquímica, microscopia etc.

El futuro de la exploración minera en el Perú, está aún incompleto falta desenmascarar de la cobertura cuaternaria algunos sectores del territorio peruano, para explorar grandes yacimientos de oro y otros minerales con contenido aurífero aún ocultos como por ejemplo, los grandes yacimientosde fierro con oro escondido en la zona de Olmos y colorado Bermejo.

Imágenes de oro Perú	Imágenes oro y amalgama Perú
 Fundición oro PampaBlanca Puno	 Oro fundido Pampa Blanca Puno
 Oro cerro La Cumbreracuzco	 Amalgama con oro, rio SecoLima

Dureza del oro:
Escala Mohs : 2.5
Color de raya: Amarilla blanquecina, brillante Formula química: Au Ag Sistema cristalino: Cúbicohexoctaédrico
Ensamble minera.: Dentro de cuarzo lechoso Fabrica: Hidrotermal Yacimiento: En vetas y/odiseminados
Procedencia: Agua salada Canta Lima
Alteración: Meteórica Fílica en los filones

Dureza del oro:
Escala Mohs 24 quilates: 2.5 Color de raya: Amarillablanquecina, brillante
Formula química: Au
Sistema cristalino: Cúbico hexoctaédrico
Ensamble minera.: Dentro de arenas o placeres
Fabrica: Hidrotermal Yacimiento:
Procedencia: Moches Chiclayo,Perú
Alteración: Meteórica

b) Cualidades Físicas Del Oro

Densidad: 19,300 kg por metro cúbico. Punto de fusión: 1337.33 K (1064.18 °C). Punto de ebullición: 3129 K (2856 °C).

Número atómico: 79.

Peso atómico: 197.

c) Cualidades Químicas Del Oro

El oro es un elemento químico, solo puede ser encontrado, no fabricado. Es inerte, significa que: difícil al deterioro, poco útil en proceso industrialo químico, es barato para almacenar durante largos periodos de tiempo.

Es notable por su rareza, densidad y su excelente conductividad eléctrica.

El oro tiene usos industriales por sus cualidades físicas. Se usa en odontológica, fabricación de productos electrónicos en contactos no corrosivos, se usa también en adornos personales, por su color y su relación con la riqueza se fabrican joyas, se conserva como valor público o privado al respaldar sistemas monetarios. Su precio en comparación a todos los demás metales, siempre es y ha sido alto, dado a su rareza, ductilidad,maleabilidad, belleza y resplandor.

d) Paragénesis de Áreas Mineralizadas.

La secuencia paragenética se soporta en el estudio de dos secciones pulidas extraídas de la zona de estudio y sus análisis efectuados por el autor en el laboratorio de petrología y microscopía de La UNMSM. Con el estudio del resultado obtenido postulamos el modelo de la mineralización presente en el área trabajada, en ella se determinó dos fases:

- La primera fase está dada por la presencia de cuarzo, pirita arsenopirita, y tenues valores de oro.
- La segunda fase está dada por la existencia de galena, tetrahedrita, esfalerita, calcopirita, sulfatos y carbonatos, estos dos últimos minerales son considerados tardíos, por presentarse en toda la secuencia mineralizada y además contienen mayores valores de oro.

e) Descripción Microscópica De Las Muestras En SeccionesPulidas

Oro de 0.02m - 0.10m. procedente de cubos octaedros y dodecaedros deformados, diseminados dentro de los demás sulfuros, arsenopirita, calcopirita, esfalerita, galena y pirita; el cuarzo se presenta cristalizado en formas eudrales, anedrales de 5.00∝ a 9.0∝. Ver figura que sigue:

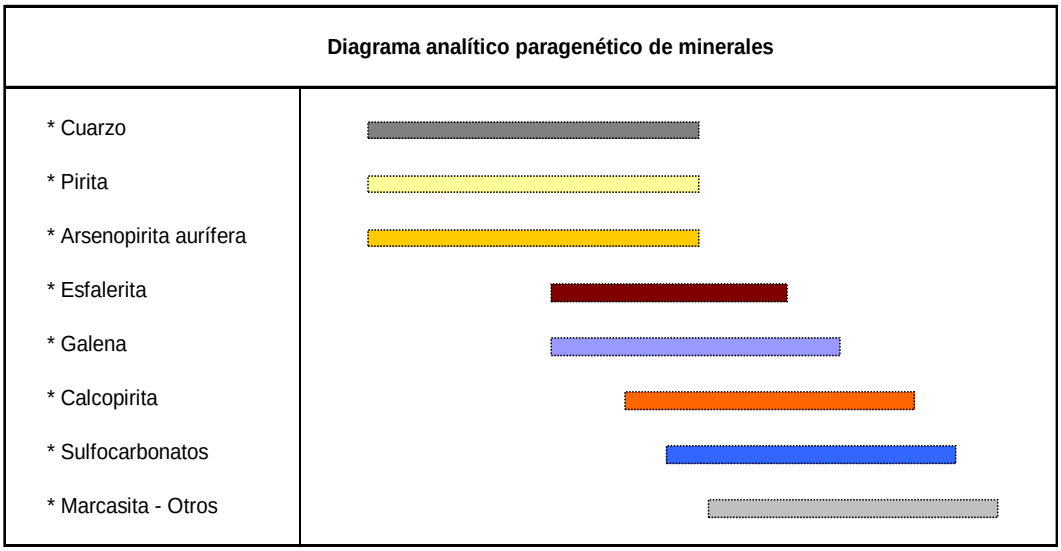

Figura Nº 28: Muestra el diagrama para genético Con barras horizontales de diferentes colores

MTA. TEGB – 5.
Textura: idiomòrfica
Sito: zona 18.
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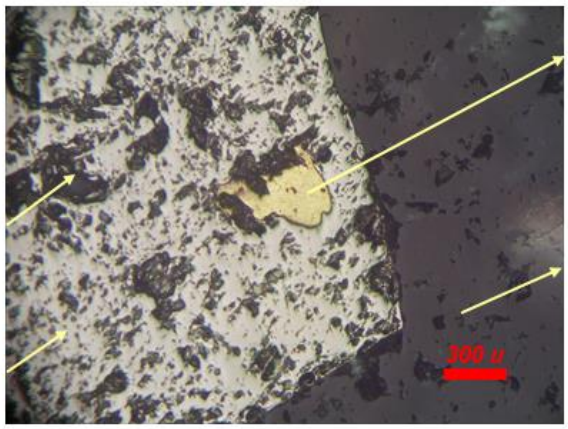
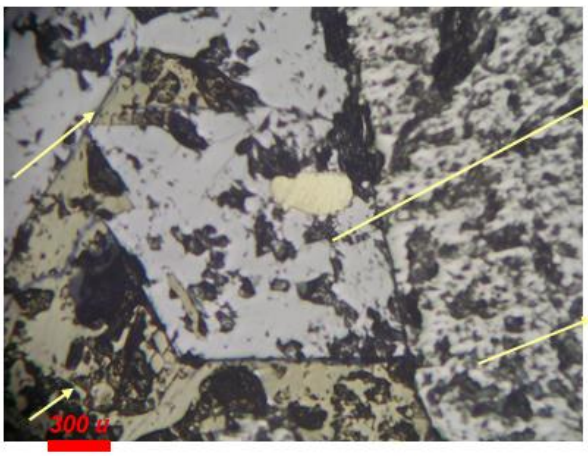
Microfotografía de la sección pulida en nicoles // s
Aumentos 200x



Microfotografía de la sección pulida en nicoles //s
Aumentos 200x



III. Procesos Metalúrgico Para Obtener Oro de Detritusrocosos

Por ser poco reactivo el oro se presenta natural en masas irregulares, hojuelas, filamento, charpas, pátinas, escamas, esporádico en cristales, con leyes dada en partes por millón o billón, está dentro de todas las rocas del planeta tierra, manométricos o sub microscópicos a macroscópico.

Ocurre en solución sólida dentro de sulfuros, teluros de oro o plata, sobresale su alta densidad, mojabilidad con mercurio, flotabilidad natural y solubilidad en cloruros, cianuros, hiposulfatos en medios ácidos. Ello permite su aplicación de cuatro formas que se usan en todos los procesos de su extracción, su pre tratamiento (oxidación química, bio oxidación u tostación de sus concentrados sulfurosos).de los yacimientos existentes de este metal en el Perú.

La obtención del oro por gravimetría método usado desde la antigüedad cuando se le encuentra nativo no refractario y con partículas auríferas superiores a 10 micras.

Por cianuración técnica usada para obtener el oro de los sulfuros, muchasveces se somete la mezcla a aireación básica previa (pirita, pirrotita, calcopirita).

La amalgamación proceso que funciona por la tensión superficial o interacción oro mercurio, que es inferior a la tensión superficial agua oro, que permite contacto y combina los dos metales formando amalgama. Para ello el oro debe ser limpio, libre de óxidos, sulfuros, sin arsénico, grasas y no muy fino, el método forma gotitas de mercurio que no atrapa oro fino, método que se sanciona al contaminar el medio ambiente, este método se aplica en los concentrados gravimétricos o de flotación, pre al uso de las placas de cobre, donde la amalgama es prensada para así poder eliminar el oro residual, sigue su destilado a una temperatura de 400°C, después ser refrigerado y recibido en agua. El mercurio es reciclado, el oro decantado, se recupera y es sometido a refinación.

Proceso de flotación se hace cuando el oro se encuentra diseminado en soluciones sólidas sub microscópicas, dentro de sulfuros (pirita, calcopirita), o minerales con sulfuro de arsénico o antimonio. Previamentees molienda la roca, salvo que el oro este muy fino y dentro la ganga y nosea densa (porosa). La pulpa flotada se tuesta y después se recupera el oropor cianuración o bio oxidación.

Para obtener oro de teluros, se muele muy fino a la roca, luego se oxida, después se trata con cianuro obteniendo oro con 80% de ley. Si no fuera positivo el método se clora y se tuesta el material aurífero.

Extraer oro de gangas carbonosas de 5% de C, se oxida el material,después se flota, luego es testa y se trata la mezcla con kerosene antes de cianurarlo. Para obtener oro de minerales con arsénico y antimonio excepto el mispiquel (oropimente), los que son más o menos solubles en soluciones de cianuro, el tratamiento es sumando reactivos y oxígeno. Ellohace más lenta la obtención de oro. El arsénico se precipita sobre el polvo de zinc y una parte se deposita en el cemento, como gas arsenamina (AsH_3)que es venenoso.

El oro en arsenopirita está en tamaños submicroscópicos y no es cianurable, tiene que flotarse para eliminar arsénico y antimonio, el concentrado es tostado, proceso que libera oro, antes de cianurarlo. A veces es necesario lixiviarlo con una solución alcalina, liberando arsénicoy antimonio, que cuando este fundida cubra al oro (controlar aire y temperatura, el oro de sulfuros de fierro, pirrotita aurífera, para extraer de ella usar oxígeno para disolver. A veces los granos de oro se cubren con una película de Fe S, los iones ferrosos reprecipitan el oro disuelto. Por ello debe oxidarse el concentrado en un medio básico, antes de cianurarlo. La pirita aurífera por ser poco soluble al cianuro, el oro está en ella en forma sub microscópica. Primero se mezcla y luego se flota, se tuesta, después se oxida y al final se cianura, lo que vuelve caro el proceso. Raras veces hacemos bio-oxidación que abarata su proceso y tratamiento.

Obtener oro de óxidos de fierro, con cianuro forman a veces una película protectora de los granos de oro, que impide concentrarse por flotación, para solucionar este impase se activa el reactivo con dióxido de azufre o este con ácido diluido.

Recuperación de oro presenten rocas carbonáceas. Al ser materiales húmicos, y carbones, al ser disueltos hacen precipitar al oro, ídem para obtener oro de algunas arcillas.

IV. Artificialmente el Oro se Obtuvo en el Laboratorio Por Transmutación

El oro se obtuvo en el laboratorio por un proceso de transmutación, con la conversión espontanea de una sustancia radioactiva en otra distinta o proceso de física atómica, que consistió en obtener por fisión átomos más simples a partir de otros átomos más complejos llamados isótopos. Se obtienen también átomos más complejos que el uranio a partir de él este, los nuevos elementos obtenidos son los llamados transuránicos, el pionero de este proceso fue Rutherford en el año 1919. La transmutación en sí, consiste en el hecho que la energía cinética de los protones emitidospor los átomos de nitrógeno, pudieran ser superiores a la energía de las partículas que incidían sobre él.

Para ello era necesario que la diferencia energética proviniera del núcleo del átomo de nitrógeno, el inglés P.M.S Blackett, observó la reacción:

$$N + He \rightarrow O + H + \uparrow$$

Transmutación de un cuerpo en otros dos, el resultado se explicaba por una reorganización del equilibrio energético del átomo.

La creencia de transmutar los metales poco valiosos en oro, comenzó con los alquimistas. Siguió Newton sin éxito, y se tuvo que esperar hasta 1960, fecha en la que se pudo obtener en el laboratorio algunos micro gramos de oro de un isótopo, bombardeando mercurio con neutrones rápidos para eliminar un protón.

Todo ello se hizo a un costo muy elevado, cumpliéndose así los sueños dealquimistas. Ahora está demostrado que sí se puede obtener oro en el laboratorio, a partir de los metales que tienen características más próximasa él, los que por su número atómico son bismuto, plomo y mercurio seríanlos más fácilmente transmutables, en 1,980 Glenn T Seaborg usando procedimientos nucleares transmuto plomo a oro el que solamente demoro unos como tal segundos debito a su inestabilidad atómica y su pequeña masa. Sin embargo en la actualidad obtener oro resulta más barato buscarlo en la naturaleza.

El número atómico de oro es 79 y el plomo es 82. Transmutar plomo a oro, no es una posibilidad, se ha hecho. Para ello se necesita es un acelerador de partículas, gran suministro de energía y un logro por peso de oro. Hace 35 años, científicos nucleares del Laboratorio Nacional Lawrence Berkeley (LBNL) California, lograron obtener oro a partir de bismuto de número atómico 83, su logro fue al golpear sus átomos con partículas, lo que les hizo expulsar cuatro protones de su núcleo, lo llevar su número de protones a 79 y obtuvieron oro. El proceso fue muy oneroso, el oro obtenido por transmutación término siendo demasiado costoso que su obtención es económicamente no realizable pierde así interés.

Los 10 principales países productores de oro

1. China: 383,2 toneladas. ...
2. Rusia: 329,5 toneladas. ...
3. Australia: 325,1 toneladas. ...
4. Estados Unidos: 200,2 toneladas. ...
5. Canadá: 182,9 toneladas. ...
6. Perú - 143,3 toneladas. ...
7. Ghana: 142,4 toneladas. ...
8. Sudáfrica: 118,2 toneladas.
9. México 111.4 toneladas
10. Brasil 106.9 toneladas

Fuente: Mining Dot Com

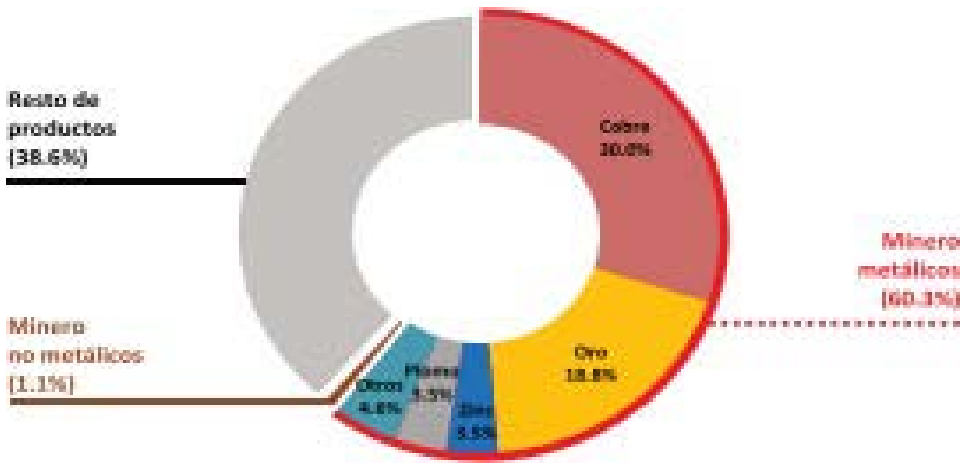
Figure

La producción histórica de oro en el Perú, acumulada desde antes de La Colonia (1496,000.00) Moz = 46.53TM, hasta el 2013, ha sido de 118 Moz = 3,669.8 TM. El 84% ha procedido de 3 franjas metalogenéticas, como la del Mioceno, Cretácico superior y Carbonífero-Pérmico. Esta franja ha producido 17 Moz de oro principalmente de Parcoy, Retamas y Poderosa 43.6. Año 2020 78.7TM 687´317,117.moz 213,755 tm. Total 4,008.785 TMf. No está incluida la minería informal y artesanal.

V. Conclusiones

El año 2020: La estructura del valor por las exportaciones (enero- noviembre) analizado al detalle, en noviembre 2020, el valor por exportaciones de cobre fue US$ 1348 millones creciendo en 18.9% respecto a noviembre de 2019. Además, dicha cifra permite superar por tercer mes consecutivo el valor de exportación de similares meses del añoprevio.

En cuanto al valor por exportaciones de oro, en noviembre se registró el segundo mayor valor exportado de (US$ 782 millones) desde el inicio de lapandemia y el tercer mayor valor de los 11 meses analizados 2020. Además, logró incremento interanual de 10.3% relacionado a noviembre de 2019. El valor de exportación acumulado de oro al onceavo mes 2020 sumó US$ 7012 millones. Valor por Exportaciones de oro (Valor FOB en millones US$)El destino de exportación al mes de noviembre, Canadá fue primero con 28.7% de la participación nacional. Seguido por Estados Unidos y Suiza con 21.3% y 19.7%, Fuente: Sistema Integrado de Información de Comercio Exterior (SIICEX). Consulta: 8 de enero de 2021. 2020: Destino de las exportaciones de oro (enero-noviembre). Ver diagrama que sigue:



Fuente: Boletín estadístico minero N° 12 – 2020.

Figure

El orógeno del Perú o cordillera de los andes es huésped de más de 100 yacimientos de minerales con contenidos de elementos metálicos que actualmente se viene explotando tales como:

Vetas o filones de cuarzo (La Rinconada, Buldibuyo), skarn (Cobriza, Constancia), óxidos de hierro, cobre y oro IOCG (Marcona, Raúl y Condestable), sulfuros masivos vulcanogénicos (María Teresa, Cerro Lindo), polimetálicos de plomo, zinc y plata (San Cristobal, Morococha), orogénicos de oro, plomo, zinc y cobre (El Porvenir, Huanzalá), Mississippi Valley (San Vicente, Bongará), pórfidos de Wolfromio y cobre (Zafranal, Pasto Bueno), pórfidos de cobre y molibdeno (El Galeno, Magistral), pórfidos de cobre oro (La tía María, minas Conga), epitermales de baja y media sulfuraciòn (Corani, Arcata) epitermales de alta sulfuraciòn (Yanacocha, Yesica), nódulos de manganeso, cobre, níquel cobalto en llanuras abisales. En algunas minas explotadas se ha utilizado sus laboressubterráneas para a partir de ellas descubrir reservas a profundidad Brownfiel y sumar su potencial (Carhuacayan, Santander, Huanzalá con sondajeshasta de 2200 metros de longitud Antamina).

En la cordillera de los Andes del Perú existen proyectos de prefactibilidad, exploración inicial, avanzada y áreas prospectivas o puntos blancos y en el 90% de ellos está presente el oro junto a los metales de plata, cobre, plomo, hierro y mercurio citamos la cordillera de La Ananea, pampa Blanca, cerro La Cumbrera, cordillera Alancoma, Verónica, cordillera de la Costa Arequipa Nazca, Ocucaje, Colorado Bermejo, complejo de Olmos, Tambo Grande y la cordillera Oriental, donde muchas de sus áreas mineralizadas están enmascaradas con material cuaternario o vegetación gramínea, marañosa o arbórea faltando aún muchos yacimientos de minerales por descubrir que están sellados o ciegos ya que no llegaron aflorar a superficie y con el uso de métodos geofísica pueden ser evidenciados, se piensa que si extrae todas las rocas sedimentarias del orógeno la cordillera de los andes estaría formada solamente por rocas ígneas y estas tendrían cuerpos de minerales con oro y demás elementos metálicos y no metálicos, de allí que el potencial de estos metales en la mencionada cordillera es inconmensurable por lo tanto será exitosa cualesquiera que fuere la prospección u exploración.

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Tracking Scale-Up of Continuous Water Services in Hubli-Dharwad, Karnataka: Discussion on Sustenance Issues

By Dr. Narayan Billava & Prof. Nayanatara S. Nayak

Abstract- Municipal water utilities across the state provide intermittent water services (IWS), with frequencies ranging from daily to weekly deliveries. To expand supplies, increase coverage and improve services, municipal bodies are looking for alternative ways to fund drinking water services. Public-Private Partnerships (PPP) are one of the means being explored by many municipal bodies to attract private investment in the water sector. In 2008, under a loan from the World Bank, as part of a scheme administered by the state of Karnataka, Hubli-Dharwad upgraded eight wards as a demonstration project (demo wards) to continuous water services (CWS). Hubli-Dharwad upgraded an additional 18 wards to CWS in 2015 (extension wards) and has plans to scale up CWS to all remaining wards shortly. In this background, we tried to understand the ongoing affordability issues and water scarcity challenges in the scale-up of CWS as compared to demo zones of CWS and to discourse on sustenance issues regarding the management and provision of urban water supply, including planning, the role of the public and private sector, involvement of stakeholders, availability of water, their sources, networking, financing, and maintenance, in India. Out of 67 wards, we selected 28 and collected information from 840 households.

Keywords: continuous water services, public-private partnerships, sustenance, stakeholders.

GJHSS-B Classification: DDC Code: 363.61 LCC Code: HD4461

Strictly as per the compliance and regulations of:

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Keywords: continuous water services, public-private partnerships, sustenance, stakeholders.

I. Introduction

Water is at the core of sustainable development and is critical for socio-economic development, healthy ecosystems, and for human survival itself (UN Water 2015). Due to population explosion and urbanization, the demand for water by households and industries has increased tremendously in countries like India. Most of the urban areas are lacking availability of quality drinking water for domestic and drinking purposes in India. In India, public sector agencies like city corporations or urban water boards have taken the responsibility for the providing of water to consumers in urban areas. However, the management of urban water supply has resulted in negligence of groundwater management, intermittent and insufficient water deliveries, and a general lack of capital maintenance leading to a water crisis in many urban centres (Iyer 2007; Priya et al. 2008, and Mathur 2013). In urban India, the most of cities deliver water through publicly management water systems; but nearly all of them provide inadequate service levels, with low coverage and intermittent deliveries. Recently, a few cities in India have begun piloting continuous (or 24x7) water supplies under a program sponsored by the World Bank and through the introduction of PPPs. Delhi (the federal capital) has planned a process of privatization of water since the year 2005 (Singh et al. 2010). In Karnataka, the state government has sanctioned 24x7 through a PPP structure for 20 cities; four larger (Mysore, Hubli-Dharwad, Gulbarga (Kalaburgi), and Belgaum (Belagavi) and 16 other smaller.

II. Review of Literature

Many Indian cities are opening to reforms in the urban water sector compared to other Asian metropolitan regions and are set to face some of the political economy involved in the water sector reforms (McKenzie and Ray, 2009). However, many studies (McKenzie and Ray 2009, Shamsher 2013) have also found that the PPP model has suffered from a lack of co-ordination, a mismatch between the contract of actual requirements and estimates to connect pipeline for households, a lack of awareness and involvement of the public, a lack of coordination between government departments, poor tariff collection rates and controversy among grass-roots advocacy groups. Many studies have tried to extend the concept of sustainability to urban water management. A study by Larsen and Gujer (1997) defines urban water systems as including collection, treatment, and distribution of water,

Author α σ: Both are working for Centre for Multi – disciplinary Development Research (CMDR), Dharwad, Karnataka, India.
e-mail: n.billava@gmail.com

wastewater and stormwater and stated that sustainable development in the urban water supply is only possible through efficient use of available water resources and adopting new technologies. The Asian Development Bank estimates a loss of around 29 billion cubic meters of treated water every year in Asia (and resulting in nine billion dollars of annual revenue losses). The study concluded that by fixing water leakages and addressing water pilferage, it is possible for water utilities in the region to significantly cut the amount of water lost, freeing up a significant amount of both revenues and water resources. A few more studies (Liemberger et al. 2007; Dragan et al. 2007, Burt et al. 2018) have focused on water losses (non-revenue water) and leakages. These studies suggest that water losses can be controlled by adopting innovative technologies. Tiwari et al. (2007) has focused on reforming the water sector in Delhi. The study tried to analyze the life cycle costs and create a multi-criteria analysis based on the opinion of experts and stakeholders on indicators such as sustainability, equity, efficiency, and overall performance of water utilities. The authors used a Logit model to estimate an index and considered the following four indicators for the study; 1. Efficiency (quality, quantity, and reliability of services), 2. Financial aspect, (Adequacy of cost recovery for operation), 3. Equity aspect, (Affordability, equitable access, and participation and decision making), 4. Sustainability and environment aspect. The study found that sustainability and management of resources are the key drivers of governance reforms in water management. Finally, poor service in the provision of water services, water is treated as a commercial entity rather than a fundamental right, accountability, and equity in access to water are all serious challenges to urban areas in low-income countries like India. Therefore, more studies on sustainable management of water supply addressing issues of management, fixing affordable prices, and improvement in technology are needed.

III. 24 X7 in Hubli-Dharwad Twin Cities

As per the Census 2011, Hubli-Dharwad twin cities have a population 9,43,788. Around 19% of the population constitutes slum dwellers, and the number of houses administered by HDMC exceeds two lakhs. 24x7 in Hubli-Dharwad twin cities is a project operated and managed by multiple players including, private and public entities. The scheme is a part of the KUWASIP, implemented in three cities of Karnataka viz. Belgaum, Hubli–Dharwad and Gulbarga. The agreement for the project was signed in 2005 between Hubli-Dharwad Municipal Corporation (HDMC), Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC), KUWSDB, and the Operator Consultant (OC) or the private operator. The pilot project has been financed through a World Bank loan routed as a state government grant to HDMC and its share. 24x7 is a bold step in water sector management as the municipal supply of water to citizens in Hubli-Dharwad was unable to meet even the costs of O&M, leave alone capital costs. But, the road to 24x7 was not smooth. It received an initial setback when announcements were made for the installation of pipes in demo zones (wards) in the twin city. The agitations were led by people who were skeptical about the scheme. However, on the other hand, a study on 24x7 water supply in Hubli-Dharwad twin cities reveals that the system does not satisfy the assumptions that were expected to be fulfilled with its implementation in twin cities (Burt and Ray's (2014), Ray et al. (2018). The study finds that the consumers continue to store water, the reasons being reliability and convenience of storing water. Secondly, cases of non-payment of water bills were also found in 24x7 demo zones due to the inability of lower-income groups to pay water bills and due to lack of trust between water users and providers. Such behavior poses problems to the sustenance of the program, as 24x7 runs on the principle that supply of water on a commercial basis to cover O&M, and part of coping costs is feasible and 24x7 reduces coping costs arising from the need to store water.

IV. Objectives and Methods

The objectives of the research article are:

1. To study the household's perception of water quantity, quality, pressure, and scarcity of water provided by upscaling CWS as compared IWS.
2. To examine the success of scale-up of CWS (extended) to demo zone wards (piloted wards in 2008).
3. To assess the equity of water supply between Slum and Non-Slum areas.
4. To analyze sustainable issues in scale-up of CWS (i.e., affordability issues, water scarcity and finance in the up scaling CWS.

a) Methods

This paper is based on the insights drawn from a sample study carried out in Hubli Dharwad twin cities during 2017-18. We conducted an impact evaluation of the pilot-scale conversion from intermittent to 24x7 water delivery in Hubli-Dharwad, one of the first cities in India to implement such a conversion. We selected 28 wards for our household survey, across four categories: i) CWS demo zone =4 wards; ii) CWS eight extension wards (Fully covered); iii) Eight IWS wards (Not covered 24x7); iv) Eight IWS areas in wards that contained areas with CWS services (Partially Covered).

For all four categories, half of the wards contained slums and Non-Slums and randomly selected 30 households in each, for a total sample size of 840 households. We collected household perceptions on water access, water quality, and the water tariff. In addition, we also conducted key informant interviews

(KII) with local water managers. The discussion in this paper is restricted to the process of implementation, consumers' satisfaction, comparative usage of water in 24x7 with the usage non 24x7, payment of bills, customers' perception on water charges, willingness to pay, issues in Public-Private partnership and sustenance of the project, which we expect can help in understanding the issues in upscaling of the project to other wards covering almost one million population.

V. Results and Discussion

The results from household-level analysis although, they appeared to be in favor of 24x7, did pose many questions about its sustainability, which we discuss later. We collected customers' perceptions about satisfaction over the quantity of water supplied, its quality, and the pressure in the pipes supplying water. For all the three parameters, the level of satisfaction was better in CWS than in IWS wards (see Fig1). Our recent visits to 24x7 demo zones revealed that several households followed the earlier system of storing water and filled fresh water once in 3 days, reasons. These reasons are uncertainty about continuity, slow flow during peak hours, and the feeling that the rates may go high if they daily use the water. So the new system has not made any difference to some of these households. Concerning quality, there was not much difference between the opinions of customers in CWS and those in IWS as they could not make a clear distinction. A few households who used to get muddy water during the rainy season under IWS due to leakages in pipes were happy as 24x7 had put an end to it. Although 24x7 assures high pressure of around 22-40 meters (World Bank 2010) minimum, being 6 meters in pipes, it was found during the survey that those staying on the first and second floor had slow water flow in the morning hours, and could fill their overhead tanks only during noon and after that. Only 58% of households have treated drinking water. We found households in IWS wards treated water compared to CWS. Moreover, we found slum households are less concerned about the treatment of drinking water than the Non-slum areas (see fig 2).

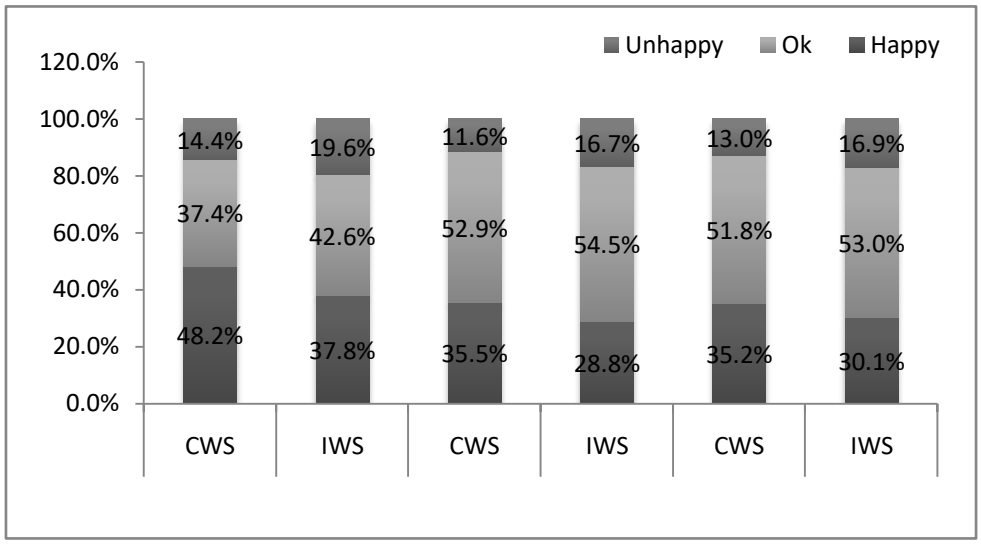

Figure 1: Satisfaction of customers (%) about the pressure, Quantity and Quality of water supplied by HDMC

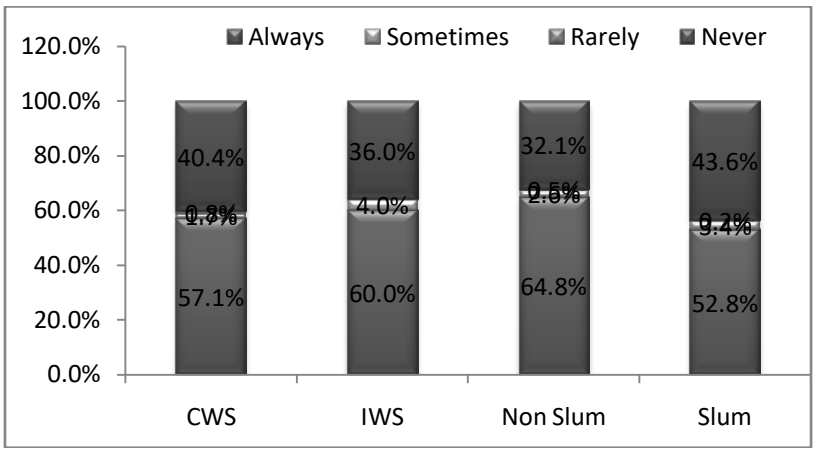

Figure 2: How often do you treat your drinking water

We have collected household's perception about the water pressure, quantity, and quality of water accessed differs between the non-slum and slum dwellers in the IWS and CWS areas and found that In IWS wards, there is differences between a slum and non-slum dwellers with regarding water pressure, quantity and quality of water (See fig 3a and 3b).

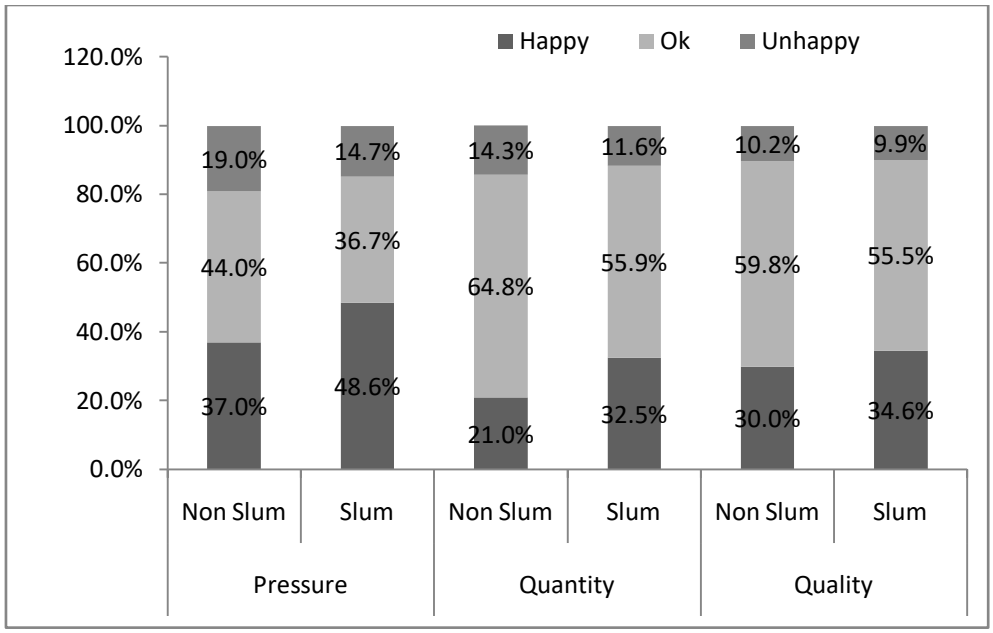

Figure 3a: HHs opinion about the pressure, Quantity and Quality of water supplied under IWS

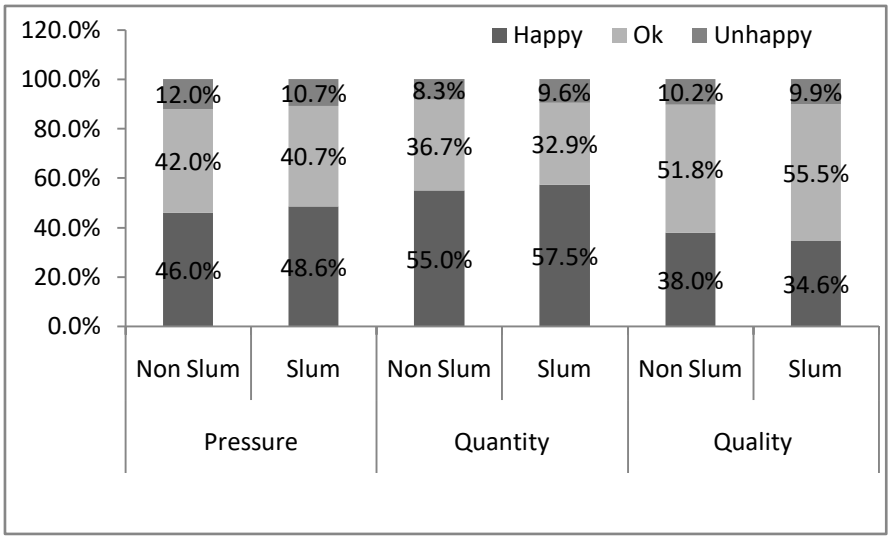

Figure 3b: HHs opinion about the pressure, Quantity and Quality of water supplied under CWS

Despite being happy with the 24x7 water supply, it should be noted that 35% of the households in 24x7 demo zones had arrears in water bills during the survey period. The share of defaulters was 23% in non24x7 zones. Slum households had much higher average arrears (almost three times that of non-slum) in CWS and IWS. We tried to know whether customers had arrears pending for long or were not punctual in payment of water charges. We asked them some additional questions on the current status of their water bill to know if the arrears were due to pending bills from the earlier system or occurred after the installation of 24x7. Regarding of whether the water bill was paid for the previous month, it was found that more than 50% of the customers in slums and 45-46% in non-slums both under 24x7 and IWS had not paid the water bills for the previous month. Demo wards are receiving good service, and extended wards face irregular water supply by HDMC after implementations of 2 years. It is likely that the customers pay the bills later, but these cases depict irregularity in payment. And, sustenance of the program and efficient implementation depends on the regular flow of income required to maintain the schemes. As per KIIs, the failure of CWS in extension,

wards was due to water shortages. Hubli-Dharwad cities have faced severe water problems due to drought during 2015 to 2018. We found that slum areas households have not much suffering in the last three years as compared to nonslum, but households that comes come under IWS wards have been faced water shortages than the CWS (See fig 4).

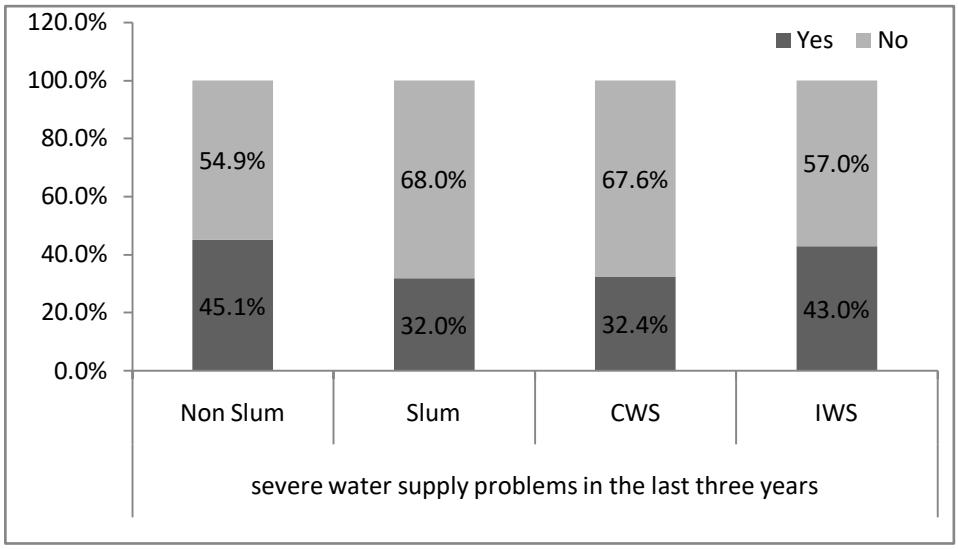

Figure 4: HHs is facing severe problems in water supply in the last three years (2015-18)

VI. Up-Scaling 24 X7 for the Entire City-Sustenance Issues

The pilot project covering eight wards, which was to be completed in 2008, got the further extension and was finally completed in 2011, taking almost six years. The scale-up as per initial plans was to be started in 2009 and completed by 2014. In 2012, when the then Mayor, HDMC, announced that World Bank had agreed to extend the loan to cover 24/7 in the remaining 59 wards, he also assured that by 2016 the entire city would be covered with the scheme. But, to date, installation of pipelines and connections to 24x7 is complete in only one layout, which is just a fraction of award. Why was upscaling not started as per the plan? What lessons can be drawn from 24x7 in pilot zones for the sustenance of the project? We tried to get answers for some of these issues.

Although 24x7 is a successful project in demo zones, one cannot assume similar results in the remaining wards scale-up. There appear to be missing links and the lack of coordination between the departments. While the plans for scaling up the project for the remaining 44 wards are being finalized, the installation work taken up in 17 plus are sluggish and stalled due to a lack of planning and cooperation from other government departments. KUWSDB officials express their helplessness in speeding the work as per plans due to lack of coordination and clearance from other departments like traffic police, railways, and Public Works Department (PWD). New roads constructed by spending crores of rupees even after receiving the World Bank approval for the extension of 24x7 to other ward, have been spoilt by re-digging for laying out water pipes. All the departments in the city are aware that the entire is going to be covered 24x7. Despite this, there is no pre-plan for coordinating the network for lying pipes in new roads.

Secondly, Sustenance is an important factor that needs to be considered for the success of any program while designing and implementing the program itself. Implementing partial or cost recovery is the first step in addressing the issue of sustainability in terms of financial implications. The extension of 24/7 to be implemented in 6 phases in the entire city requires about Rs.1146 crores, excluding 113 crores already invested by KUWSDB in laying down HDPE pipes and creating the infrastructure required for 24x7 in around 17 full wards and partly in 14 in the second phase. Since the upscaling is financed by the World Bank loan, PPP in terms of involvement of private operator and financial contribution by HDMC as its share is a must for initiating the project. In the upscaling of 24x7 by KUIDFC to the entire city, HDMC was required to bear around 30% of the cost in the first phase and 100% of the cost in the second phase towards capital investments, unlike the pilot project wherein 100% of the capital cost was provided as a grant from the State. Out of total estimates of 1146 crores, HDMC's share as per present estimates is Rs.213 crores in the first phase and Rs. 383 crores in the second phase. As per the discussions with the officials of KUIDFC, KUWSDB, and HDMC, financial constraint due to HDMC's share was the main challenge in upscaling the project to the entire city. Until recently, it

was doubtful whether HDMC could contribute its share towards project costs in upscaling the project.

In addition to financial stability, in terms of physical requirement the implementation of 24/7 demands a permanent source of water, which is sufficient to meet the demand of the people throughout the year. One of the important risk factors in maintaining sustainability is the availability of bulk water from the main sources to cover the entire city with all legal connections and 24x7 water. As we understand the bulk of the water available from the main source (Malaprabha River) is entirely being utilized, and there is volatility in the second source (Neersagar), which is dry during summer. There are concerns about the availability of water in Malaprabha reservoir to sustain upscaling of 24x7 for the entire city. Any decrease in the water level in Malaprabha reservoir and Neersagar can lead to a water crisis in twin cities (Anon 2011). Many times, the reservoir has witnessed water shortage. In 2012 the water level in Malaprabha had gone down for the first time in ten years from 37.04 TMC to 3.15 TMC (Huralimath 2012). So the discussion on how increased demand for water will be sustained for the existing population is crucial. The present water requirement, including the supplies for upscaling wards of Hubli-Dharwad town, as per commitments, is 20 to 30 MLD water are shortages as against demands. As per officials of the water board lack of water storage and fully depending on the private organization for water network are the main reasons for the delayed project for implementing remaining wards of Hubli-Dharwad. The following statement made by the Asian Development Bank in its final report on water supply models in India raises doubts about the sustainability of 24x7 if the project is scaled up in the entire city or is replicated elsewhere; "24/7 water supply is possible as long as the capital investments are provided as a grant from higher-level governments, and as long as the charges for the bulk water supply do not include either capital investments or electricity costs. In addition, the Operator Consultant is paid for his services through a contract with guaranteed payment without requiring him to make any capital investments or risk consultant's funds to support the O&M" (ADB 2014:15).

VII. Conclusion and Policy Initiatives

The project 24x7 water supply has been completed and is working smoothly, although there are some hurdles that question its achievement and sustenance. A majority of the customers are satisfied with the quality and quantity of water and services of the private operator. People have saved time due to collecting and storing water and are free from disturbances of odd-time supplies. However, based on household surveys and interactions with customers and other stakeholders, the study finds that households were not satisfied with the quantity, quality, and pressure of water provided by IWS compared to CWS. Demo wards have continued to provide CWS since 2008. Still, in extension wards, households report regular gaps in service, for example, receiving water only five days per week or only part of the day. According to our KIIs, the failure of CWS in extension wards was mostly due to water shortages. At the same time, slum households had much higher average arrears (almost three times that of non-slum) in both CWS and IWS. Some groups were advocating for their own discounted water rates as well: urban farmers practicing animal husbandry claimed greater water needs; sewage workers claimed to need more water to washcloths and bathe. KIIs inform us that financial constraints at the HDMC and continued challenges with insufficient water availability will lead to increases in the water tariff shortly.

Proponents of the scale-up of CWS claim success in providing CWS, increasing regular issuance of bills, and improving revenue collection rates. But, in scaling up CWS to the entire city, the municipal corporation has yet to deal with pending cases of arrears, sufficient storage of water and networks, calls for subsidized rates, or insufficient water supplies. PPPs redefine the role of the HDMC and in the long term, could have implications on whether water services remain accessible and affordable. The pilot/demo project protected by 100% grant and coordination of enthusiastic stakeholders appears to be successful in continuous supply of water, reduced nonrevenue water, increased billing and collection. But, in upscaling of the project to the entire city, the municipal corporation has to deal with cost-sharing, new private operators, pending cases of arrears, subsidized rates, ensure coordination in implementation and availability of water throughout the year and, redefine its role as well that of government agencies, which in the long term could have implications on a sustenance of the project. The main impediment in the sustenance of the project is the mounting of arrears from the earlier and current system. Waiving off arrears may boost the confidence of the users and make them regularly pay their water charges. But, this could set a bad example for the consumers in the remaining 44 wards likely to get 24/7 within the next two-three years. So before connecting households in 44 wards to 24/7, KUWSDB has to ensure that arrears relating to intermittent water are paid, and there is redressal of grievances, due to errors in billing, faulty meter, change of ownership, etc. If this issue is left unaddressed, it could keep on bouncing back with mounting arrears and remain an unresolved issue. Hubli Dharwad Municipality should ensure that it will not fall short of funds towards developmental activities on account of diversion of regular or special grants towards 24x7 and look for alternative arrangements and sources, including enhancing its tax base to fill the gap. And,

finally, the project should ensure timely availability of funds and water and execute the plans as per the designs to meet the requirements for augmentation of water resources.

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Deleuze and Guattari: Geophilosophy and Historical-Geographical Narratives of the Balkans

By Goran Mutabdžija

Abstract- Geophilosophy is a spatial concept that will be applied as a supplement to the geographical method, with the aim of better understanding the historical-geographical conditionality in the Central Balkans[1], its political-geographical evolution and the variability of regional-geographical forms[2]. As a philosophical concept, geophilosophy was created by Deleuze and Guattari (1995) at the end of their scientific careers. From their philosophical point of view, Tampio (2014), Protevi (2010), Parr (2010), and others wrote about their work. This concept also has its geographical dimension, and significant results have been written about it by Woodward (2017), Bonta (2010), Peet (1998), and others. All these authors emphasize the importance of the book A Thousand Plateaus (2013). A form of new materialism with a politicized "philosophy of differences" was successfully developed, and in which the meaning of geophilosophy is created through the superposition of layers of thought. Although indications of geophilosophy can be recognized in Nietzsche's works, and the whole concept can be interpreted as a philosophical aspect of geographical (geological) processes, this concept has a far more complex meaning (poststructuralism).

Keywords: *geophilosophy, territorialization, deterritorialization, reterritorialization, milieus, balkans.*

GJHSS-B Classification: *DDC Code: 950.072 LCC Code: DS12*

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Keywords: geophilosophy, territorialization, deterritorialization, reterritorialization, milieus, balkans.

I. Introduction

Deleuze and Guattari created a system of spatially distributed concepts and geophilosophical concepts based on complexity theory, which appear in unforeseen socio-spatial differences and encounters. Based on neo-materialism, they connected the philosophical materialism of Marx, Nietzsche, and Freud with modern science while avoiding traditional determinants of materialism, such as determinism and vitalism.[3] Therefore, Saldana (2013: 48) believes that "after Deleuze and Guattari, philosophy is not empirical, but deals with abstraction, while science, whether human or physical, is dedicated to understanding parts of the real world." Based on such an abstraction, Protevi (2010: 83) states that geophilosophy enables the abandonment of "paralyzing postmodernism," which has captured critical modern schools of geography and philosophy and contributes to the study of mental images and provides an opportunity for cooperation between philosophers and geographers. This means that geophilosophy implies deep engagement in dominant trends in philosophy and modern earth sciences. Therefore, it is necessary to immediately establish a clear ontological or philosophical-geographical framework of work, including concepts (territorialization, deterritorialization, reterritorialization, landscape, and miles) and spatial abstractions (lines, planes, and spaces), which carefully identify mapping practices. The basis for this is the primary subject of geographical study (space), which is socially constructed (Lefebvre, 1991) and in geophilosophical terminology can be differently shaped (striated or gridded). They distinguish between "striation" and "smoothness," which have opposite meanings (Earth - air) and reflect different forms of thought (state-space - nomad space). The first space is furrowed or latticed; it characterizes the "state philosophy," the movements take place in a horizontal plane, guided by logos. The second space is polished or open-closed, which can appear at any point and move anywhere, and is driven by the nomos.

In addition to the mentioned concepts, Deleuze and Guattari use a whole range of concepts from other sciences (mathematics, physics, biology, ecology, and anthropology) to create new philosophical ideas. Woodward (2017: 2866) recognized a kind of interaction between these geophilosophical concepts

Author: e-mail: goran.mutabdzija@gmail.com

[1] The broader framework of this approach is applied in the book G. Mutabdžija, Geophilosophy of the premodern, 2021a.

[2] The historical-geographical framework for this Appendix is the second part of the book: G. Mutabdžija, Regional Geography of Bosnia and Herzegovina, 2018.

[3] Here, Protevi meant the doctrine (Vitalism) according to which the functions of a living organism act thanks to a life force different from physical and chemical principles and whose biological activities are determined by some supernatural force. Aristotle (entelechy), Kepler (formative power), and others wrote about this.

and contemporary philosophical problems in the domain of geography (Marxist and feminist practice) and exclusively in the field of "small theory, interpretive theory of influence, ontological turn and new materialism." Interpreting the importance of the geophilosophy of Resta (2017: 14), she expanded her subject of research because it connects it "with the attempt to explore the complex meaning of man's sojourn on Earth." Since the impact of globalization leads to global uniformity and the eradication of cultural identities, geophilosophy should be aimed at protecting the "elusive spiritual, cultural, historical and spatial physiognomy of communities and places." It derives this from the meaning of our existence, which it derives from the plurality of human communities that "each time create a unique time and place, giving them a unique and unrepeatable stamp." An important determinant of the geophilosophical approach is the notion of milieu, which according to Bonta and Protevi (2004: 113), represents "the material field in which layers and sets are located" rhythms, out of chaos."

> Each mile is a vibrating ... space-time block consisting of periodically repeating components. Such a living being has outer miles of material, inner miles of composite elements and substances, intermediate miles of membranes and boundaries, and annexed [also 'associated'] miles of energy sources and action-perception (Deleuze and Guattari, 2013: 313).

Precisely on the example of the complexity of the geophilosophical concept of the milieu, which is far broader than the geographical understanding of the term, the ambiguity and applicability of geophilosophy in the domain of geographical discourse are recognized. Mutabdžija (2021: 24) states that its first meaning can be related to the attempt to understand (philosophical aspect) the conditions in which geological (geographical) processes arise and take place. Another meaning is deep philosophical thinking (postmodernist interpretations). Well, therefore, it is not a subject of geography. Thus, outside the narrow framework (geography or philosophy), the first meaning is associated with the whole, that is, multiple aspects concerning the relationship between man and space. Thus, this paper aims not to analyze the theory of complexity on the example of different geophilosophical concepts from a geographical point of view. Instead, the goal is to discover the meaning of these terms (geographical aspect) so that their application (only basic geophilosophical terms and in narrowly defined areas) would supplement the geographical methodology that would allow us to understand complex geographical processes better. Usually, our understanding of these basic concepts has an entirely personal stamp. It is imbued with unique imagination and deep thinking about the geographical study (space). Thus deprived of the existence of universal meanings (on a personal level, we can present it as my way from me to you is not the same as your way from you to me).

To achieve this, we will strive to adhere to the practical recommendations of Tampio (2014), which suggests that we apply four rules when studying Deleuze. The first refers to etymology because the notion of territory (one of the key concepts in the Thousand Plateaus) and its thought derivatives (deterritorialization and reterritorialization) originate from the vague idea of "land." The second rule refers to the creation of images (an allusion to the Hegelian narration of the history of philosophy). This is because Deleuze advises, in the analysis of concepts, that it is better to start with straightforward, concrete situations and not with philosophical predecessors or problems as such. The third rule starts from the fact that Thousand Plateaus uses the method of "stratoanalysis" (meaning a schematic representation of different layers), so they need to be presented and shaped in the form of diagrams. Finally, the last rule refers to the need to create a theory. Deleuze describes it as "mastering the art of portraiture" because according to him, the goal is not "creating a way of life," or repeating what one philosopher said, but "creating similarities, separating and the level of immanence he established, as well as new concepts which he made."

II. Territorialization

The spatial definition of geography is limited by the disciplinary notions of territory and territoriality and the geophilosophical notion of territorialization. The territory is most often used to have political (the power to restrict access to certain places) or ethnic meaning (a particular group's dominance over a specific area). The term derived from territory is territoriality, which Agnew (2009: 746) denotes as a property of territory, which can also be presented as an international system of states or a territorial expression of their sovereignty. The modern state controls the population within defined external borders through this notion. Delaney (2009: 196-208) emphasizes the functional relationships between space, power, and meaning in determining the terms territory and territoriality. Each of these terms refers to complex social phenomena, and in combination, they increase the complexity of the terms territory and territoriality. Deleuze and Guattari derive the crucial notion of geophilosophy - territorialization from the notion of territory. In clarifying and interpreting geophilosophical concepts, Bonta and Protevi (2004: 158) state that for Deleuze and Guattari, the territory does not have a fixed definition (separated from the external threat by a border), but is only a passing place, conceived as assembling. The process of transitioning to something else while maintaining internal organization. Territory refers to a moving and changing center (vector) defined as a particular point in space

and time. It has no specific connections (nostalgic or xenophobic) but expresses an experiential concept (neither symbolic nor representative and meaningless).

Based on Deleuze and Guattari (2013: 49-86), it is possible to present the mentioned third rule to present stratoanalysis graphically. Such visualization needs clarification, which Bonta and Protevi (2004: 56) derive from the existence of axiomatic connections between three "different, undefined, primitive elements in the formal system" (chaos, territory, and cosmos). The free interpretation of that process indicates the formation of an unorganized milieu within the current chaos, which passes through intensive territorial assemblies to the Earth. It then enters the sphere of abstract thinking (cosmos) through the plane of consistency. Constructing a level of consistency requires "overcoming common patterns or hierarchical agents (constructed by deterritorialization or destratification), to allow the formation of heterogeneity." It is visible on the first level (chaos) within which a particular mile is created on a different architecture (conceptual, social, and physical). A territorial structure called territory emerges only by passing through territorialization and stratification.

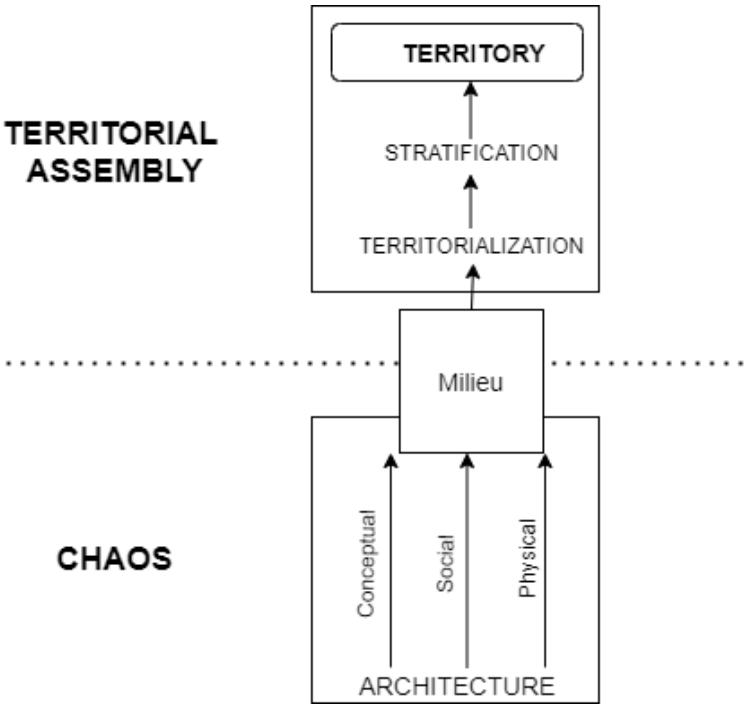

Diagram 1: The process of territorialization (Mutabdžija, 2021: 30)

As a set, territory expresses a series of ever-changing heterogeneous elements and circumstances that, for various reasons, come together at a particular time. Primarily, the territory is marked by how movement takes place across it and not by state borders. Nevertheless, the relationship between territory and country shows that territory does not abandon its principle of organization. Unlike a particular or localized time and place (offered by territory), a land provides alternatively complex assembly across different productive lines of becoming or establishing.

After this simplified introduction, he can move on to the field of geography and try to recognize its interaction with geophilosophy. Mutabdžija (2021: 31) viewed the notion of territorialization through the prism of urban geography in the example of ancient Greece. Crete became a territory several times during prehistory because "the way of moving across it" changed every time. It means that the territory is furrowed (striation) and smoothed (smoothness), with a specific structure built into it, in the broadest sense, the culture of living, which had its meaning (agricultural, commercial, political ...). For the first time, in the early Minoan period, Crete ceased to be a territory. The advanced Potam cultures of that time (Mesopotamia and Egypt) had lively trade contacts, and due to the great distance between them (probably for practical reasons), they decided to build a "shopping mall and gas station with accompanying facilities" in Crete. Arise is Knossos, the first European city, on the matrix of elaborated urban solutions from the mentioned advanced cultures. This process can be described in more detail on the example of the Balkan milieu and the creation of the first territory.

The Iron Age was the final stage in a long cultural journey through prehistory. Its end in the central Balkans marks two grand events: the birth of Jesus Christ and the beginning of a historical process. The first event will gain its full meaning in the Balkans after almost a millennium (the baptism of Slavs), and the second is related to the victory of the Roman Empire in

the Illyrian Wars. To understand the framework in which the territorialization of the Balkans took place, a brief overview of the basic characteristics of cultural development during prehistory is necessary. Three important determinants stand out. The first refers to understanding the development of primitive cultures and then civilizations and cities. The constant interaction of different cultural groups within the wider Mediterranean circle, a new cultural reality emerged, played a crucial role. Indeed, cultural influences were transmitted from the Middle East and Asia Minor to Europe during prehistory, mainly through the Aegean and the Balkans. Various forms of material culture emerged from these contacts, and the Balkans took on Eurasian cultural forms. If we wanted to express this archeological reality in the language of geography plastically, then we would use the theory of geographical "properties of merging and permeation" and their opposite "properties of isolation and separation" J. Cvijć, which was applied to the Balkan Peninsula and is the basic idea of connecting in anthropogeography. It is projected in the "model of points of attraction (in the newer terminology of growth centers), and the properties of merging and permeation (in modern terminology of the axis of development), and in the new age will take the form of the center-periphery model" (Gčić, 2008). The second determinant is the material trace of these cultures (artifacts) preserved in the soil, resulting from the difference in the speed of formation of the pedological substrate and the destruction of cultural remains. From the archeological material from these cultural layers, the history of cultural development at a given locality was "read," e.g., Vinča. The third determinant is the multi-layered transformation of a prehistoric person, which we recognize first as professional. It refers to the change of his basic profession of fruit collector - hunter and the role of fisherman, then farmer, cattle breeder, and craftsman. The social dimension of this transformation is visible through the change of habitat, which moves from the original cave and ditch to dugouts, soybeans, and simple huts, and then to solid stone buildings, and at the end of this chain are aristocratic palaces and, finally, cities. The cultural upgrade is visible from the original drawings on the walls of the caves, making stone figurines and jewelry from bone, various weapons and tools, decorated ceramics, and metal objects. The culmination of this cultural development is the appearance of writing, which represents a sharp boundary towards the beginning of the historical era. This process did not happen simultaneously in Europe or the Balkans. In the Aegean, the appearance of the first "linear B" alphabet is related to the Mycenaean civilization (II millennium). The origin of the Greek alphabet dates back to the 9th century BC, thus officially beginning history. For this occasion, the Balkans had to wait for the arrival of the Romans in the first century, which was the introduction to later Christianization. Understandably, there were no clearly differentiated geographical regions in the Balkans in the prehistoric period. Still, one can only speak of areas inhabited by certain ethnic communities (Illyrian tribes) from this distance. In the current description of the process of territorialization (see diagram 1), we understand that prehistory represented the "chaotic mile" from which matter and energy (in our case, the population substrate) spilled over into the territorial structure at the beginning of the historical period. This process is where the territorialization of the social stratum (tribal differentiation) and its stratification (construction of specific tribal material culture) began. We learn more about this through the archeological remains of these cultural groups. The archeological sites at the iron ore mines in the vicinity of Prijedor show that the Japods were skilled in mining and metallurgy. Also, based on the research of numerous tumuli (necropolises) in Romanija Mountain, the archeological remains of the Glasinac group were discovered. It showed that among the Autariates, in addition to cattle breeders, there were also good masters for metal processing. Other tribes also had their specifics, e.g., The Delmatis were cattle breeders (there were also fields in western Bosnia), the Mezeis were engaged in farming and fishing (Posavina), and the Daors were the first to create an imposing megalithic structure of the city (Ošanići). In this way, material culture contributed to the completion of the process of territorialization, i.e., the creation of a territory that in the historical-geographical sense covers the period, approximately, of the first millennium of the ancient century (X BC - I AD)

III. Deterritorialization

According to Deleuze and Guattari (1995: 107-144), deterritorialization refers to the dissolution or abandonment of existing territories to form new assemblies through the constant change of "thought, movement, articulation, framing and other ways of coexistence." In this way, she re-examines the nature of thought as "a geological process that is in constant contact with the earth itself" and "as more movements of the multitude that refer to territories, and not to cognitive abilities limited to already formed objects." Thought is deterritorialized when it is separated from a particular social territory, and according to the "ways of movement," there are two types of this process. Relative deterritorialization concerns "the historical relationship of the country with the territory that is forming and disappearing on it, its geological relationship with eras and catastrophes, its astronomical relationship with the cosmos and the star system to which it belongs." Absolute deterritorialization refers to the country itself when it passes into the "pure plan of the immanence of one thought-being, thought-nature with infinite diagrammatic movements."

Based on this, Lundy (2011: 117) concludes that relative deterritorialization always refers to the movement from the territory to the country, of which they are all apart, and absolute deterritorialization to the land itself, which is made about the structure of thought. Such a description indicates the greater importance of absolute than relative deterritorialization in the production of philosophical thought. However, he cites Deleuze and Guattari's view that absolute deterritorialization can only refer to certain relations that have yet to be determined through relative deterritorialization, which are not only cosmic but also geographical and historical, and psychosocial. There is always a way in which absolute deterritorialization takes over relative deterritorialization in a given field because absolute deterritorialization "does not think for itself: without the right milieu, without a proper relationship with a relative, it will not become a new country."

The constant movement of the country causes deterritorialization in a place that transcends any territory, making it what "deterritorializes and what is deterritorialized." That is why Deleuze and Guattari (1995) emphasize that the country merges with the movement of those who leave their territory, and they recognize that, for example. As the movement of "animal species in search of food, an advancing army, or pilgrims riding the path of heavenly salvation." The Earth encompasses all elements but uses only a few (one or two) to deterritorialize the territory. These movements of deterritorialization cannot be separated from the territories "that open to another place, and the processes of reterritorialization cannot be separated from the country that always gives territories again and again." According to them, they are two components (territory and country) with two inseparable processes: deterritorialization (from territory to Earth) and reterritorialization (from Earth to territory). They express the dilemma of what comes first: "Greece is the territory of philosophers or the country of philosophy?" It can be extended: "Is Greece a country of philosophers or territory of philosophy? In both cases, we have clear answers: if philosophy has deterritorialized Greece, then philosophers have reterritorialized it. Conversely, if philosophers deterritorialized Greece, then philosophy reterritorialized it. Deleuze and Guattari see another example of deterritorialization in purely geographical notions of state and city. The state, with the help of the imperial space (spatium), determines the original territory by "appropriating the territories of local groups" and "putting agricultural territories against each other and comparing them by bringing them under one higher arithmetic unit."

It confirms the early political-geographical thesis on the organic growth of the state (Ratzel), which is expressed through the imperial power of the state, which strives to conquer new territories (to the level of rounding off natural borders), which it then unifies in the domain of agricultural production. At the same time, the city adjusts the city's expansion (extension) with the help of trade flows and thus adapts its territory to the "extensible geometric space." The development of capitalist social relations establishes a historical connection between global processes of industrialization and urbanization, which are reflected at the local level through the interaction of the city and the environment. This can be presented interdisciplinary, at the level of economic research (industrialization, deindustrialization, and reindustrialization) and spatial planning (urbanization, deurbanization, and re-urbanization), illustrated by numerous examples, from location theories and polarized development concepts to economic development models and regional planning doctrines. Geographically, Soja (2013: 279) recognizes the consequences of this interaction because "increased sectoral segmentation of the labor market increases geographical fragmentation and segregation of the workforce." This means that changing the economic structure in highly developed urban areas leads to greater participation of employees in creative and innovative industries (high technology and financial sector) compared to a traditional industry. At the same time, the phenomenon of labor segregation (class, racial, ethnic) is visible at the residential level (housing zones) and the workplace (according to the complexity of work tasks).

Deterritorialization has its own rules, which Deleuze and Guattari (2013: 196) shape into theorems[4]. The first theorem emphasizes that nothing is deterritorialized on its own, but that "there are always at least two terms: hand - a useful object, mouth (babies) - breasts (mothers)." These terms are subsequently reterritorialized to the other, with no return to the original state (ancient territoriality). It implies that the reterritorialized element serves as new territoriality to another factor that has lost its territoriality, thus starting the whole system of horizontal and complementary reterritorializations. Let's explain it like this; the hand is used for grasping. Still, it is also an example of relative deterritorialization (during evolution, the front paw of a hominid was transformed into a fist). Its complement (correlate) is a valuable object or tool (for example, a club is a deterritorialized branch). In the continuation of the process, an example of the reterritorialization of the hand can be a prosthesis (replacement for a lost arm) or a locomotor hand (robotic arm) in the domain of transhumanism. Another example is illustrative (lips - breasts), which indicates that only men have lips, i.e., women have breasts. The deterritorialization of the mouth resulted in lips (twisting of the mucosa outwards), and deterritorialization of the mammary glands in female hominids resulted in breast formation. So, lips and

[4] Given its character, in addition to the absolute and relative, there are negative and positive.

breasts serve as a correlate to each other. The second theorem refers to the speed and intensity of deterritorialization and clarifies that the fastest element combines its power with the lowest power. It leads to the third theorem, which indicates that a less deterritorialized feature is reterritorialized on a more deterritorialized part, creating a dual system of reterritorialization (vertical - bottom-up). It means deterritorialization is the path from territory to Earth, which is conditioned by change: opinions, movements, articulation, framing, and way of life (in the territory), which leads to changes (in the Earth) in the domain: establishment of order, borders, codifications, structure, stability of habits and limitations. Let us now try to present this with examples from historical geography (I-V AD).

Mutabdžija (2021: 216-219) states that with the arrival of the Roman Empire in the Balkans (after 9 AD), a script (Latin language and script) was brought, so this part of Europe became part of the historical world. Also, this was the first imperial organization in the Balkans that gradually achieved a successful model of spatial planning and whose basis consisted of three elements: the hierarchy of the urban network, roads, and public administration. These elements of the spatial organization were causally connected, although their development did not arise based on unique planning concepts but specific strategic and economic-political goals. The main instrument and starting point for achieving these goals was the construction of roads, which enabled much more efficient transport than the caravan type. The precondition for that was military control of the territory and neutralization of pirates. The administrative organization of the empire began only after two and a half centuries of the fighting because only then did Rome dominate this area, which was called Illyricum and divided into two provinces: Pannonia and Dalmatia. Due to the danger of barbarians, Rome built a fortified border (limes) on the Danube, but the demographic superiority of the barbarians diminished its importance.

Cities have always been the most crucial element of spatial structure and, through indicators of political strength and economic development, have indicated nodal-functional significance and influenced overall social development. When organizing the urban system in the provinces, the Roman government relied on the existing network of urban or anti-urban settlements (oppida) built by peoples already living in the newly conquered area and the urban development of Greek-founded cities in these parts of the Mediterranean continued. The network of urban centers was formed in such a way as to affirm the Pannonian and Adriatic orientation of this area strongly. Military camps on the border became points around which cities sprang up over time. Mines and spas had a similar significance, the core of urban settlements. Another element of the spatial structure is road communications. The Romans discovered rich ore deposits in Bosnia, opening silver, copper, iron, lead, and salt mines. It encouraged the construction of settlements (municipalities), roads (via), and military camps (castrum), and the main traffic routes were longitudinal (west-east) and followed the flows of the Sava, Drava, Danube, and Morava, or the Adriatic coast. The most important was the Military Route (via Militaris), which connected Pannonia (Siscia, Sirmium), Moesia (Singidunum, Viminacium) with the center of the Eastern Roman Empire (Constantinople), and the centers of Dardania (Naisus, Ulpiana, Scupi) and Macedonia (Stobi, Thessaloniki). The main roads went through the river valleys, and there were other transversal routes, which connected the Adriatic ports with the centers in the Pannonian Plain. One of the main features of the Roman state was constant spatial expansion.

The deterritorialization of the observed area was gradual and successful. By the rules according to which it is carried out, deterritorialization has pointed out the specifics of this space-time block. Spatial logic shifted from the local (tribal framework) to the global (Roman rule extended to three continents), and an even more revolutionary change occurred with the understanding of time. A calendar and Roman reckoning of time were established. The concept of time is a legacy of ancient Greece and the Aristotelian-Ptolemaic aesthetic conception of the finished world. In these performances, the world was perceived as static, a part of a harmonious cosmos in which time had a cyclical form of development. Based on the previously mentioned rules, the deterritorialization process can also be presented in tabular form:

Table 1: The first deterritorialization of the central Balkans

No.	Territory	Striation	Land	Consequences
1	Mezeji	– piracy as a form of thinking – domination of local movements – tribal separation and fragmentation – cultural inferiority – inadequate infrastructure	Iliricum	– establish. of municipalities and state control – defining boundaries – powerful infrastructure – unification through Latin language and script – stability of the economy – restriction of locality
2	Japodi			
3	Autarijati			
4	Desitijati			
5	Delmati			
6	Liburni			
7	Daorsi			

Source: Mutabdžija, 2021: 219.

We now see that deterritorialization refers to the abandonment of existing territories to form new assemblies through the constant change of "opinions, movements, articulations, framing and other ways of coexistence." Where deterritorialization is present, there are tendencies towards "order, border, codification, structure, stability, habits and constraints." In addition to this form of deterritorialization in the domain of social stratum, it is possible to recognize other deterritorialized forms, e.g., paved path - road (via), boat-galley, border - limes, natural economy - exchange of goods, tumulus - stela, mine - municipality.

IV. Reterritorialization

Clarification of the process of reterritorialization should begin with the term Earth (land/Terre), described by Deleuze and Guattari (1995, 2013). They make an essential distinction between Earth, ground, and territory, terms that express how various "social machines" occupy earthly space. Thus, the term "new earth" (Eng. A new earth, Fra. Une nouvelle Terre) implies new human relationships, starting with the creative potentials of material systems, which can form specific forms from various means. It represents the art of using "intensive material," i.e., the interchange of absolute deterritorialization and the presence of "cosmic forces." Land (Fra. Terre) consists of excessive coding of territories under the signifying regime and state apparatus and refers exclusively to "furrowed" (cultivated) space and represents land that can be owned, held as value, distributed, rent, and prepared for agricultural production and tax. Land can be networked, distributed, classified, and categorized without physical experience. It has become more apparent that reterritorialization implies a process conjugated with a new territory, i.e., it is the path from country to territory. The process of reterritorialization can be shown in the historical and geographical development of the central Balkans during most of the medieval period (V-XI AD).

Parallel processes marked the beginning of this period for a century and a half (325-476) in the two most important cities of the Roman Empire. As Constantinople, the most famous and largest city in Europe for an extended period of one millennium, began to emerge in the empire's east, eternal Rome began to fade, lose strength under the barbarians, and finally collapse as the center of the Western Roman Empire. The fall of Rome ended a long ancient period that lasted 13 centuries (from VIII BC to V AD), which was marked by the rise and fall of numerous Greek polises. Just as Greece ceased to exist as an independent state but passed on its most significant values (Hellenic civilization) to its conquerors (Rome), so Rome enabled the continuation of another millennium through the most valuable elements of its civilization (culture, religion, government). This happened because: "by merging Hellenistic culture and the Christian faith with the Roman state form, the historical phenomenon we call the Byzantine Empire was created. This merger was due to the shift of the center of gravity of the Roman Empire to the east, caused by the great crises of the 3rd century "(Ostrogorski, 1998: 48).

The Byzantine era began with the Christianization of the Roman Empire and the founding a new capital on the Bosphorus. Constantine started it, and this tremendous historical-geographical watershed between antiquity and the middle Ages is visible in our region as an interruption of the development of cities and the construction of roads. These two outstanding achievements of Roman rule were threatened by the invasion of barbarians (Huns, end of IV and beginning of V century). Along with the state crisis in the West (Rome), Christianity (Byzantium) is strengthening in the east. The great emperor Justinian I built the Empress's City (Justinian Prima), rebuilt cities and built new fortifications on the Limes, and established bishops in the cities. During the medieval development, the same elements of the administrative-territorial organization in the studied area were recognized through the existence of two hierarchical levels for urban centers (squares and cities) and three levels for territories (parishes, regions, and countries). From the historical-geographical point of view, in the studied area, the early middle Ages were marked by Slavic colonization, which achieved the complete domination of its demographic mass and assimilated the rest of the Romanized and Germanized population. According to Rogć (1982: 77 -78), the main features of this area are reduced to two dominant processes. The first is the political-geographical division between the first autochthonous Slovene political-territorial centers (which were maintained and further developed) and the rest of the vast zone of domination of the Slovene population without a solid organization (Sclavinija, Slavonia, or Slovinja). The second determinant is the complex process of shaping a new type of rural cultural landscape within natural-economic relations. It is a space without city centers, developed trade exchange, and established road communications and traffic. The only exceptions are the preserved and restored Adriatic cities, which exchange livestock and forest products with neighboring Italy. The geographical influences of these remnants of the developed ancient trade contributed to strengthening the first autochthonous cores of Slavic political-territorial units in the hinterland of the Dalmatian Romanesque cities: Dubrovnik, Split, Trogir, and Zadar.

The significance and crucial importance of this phase in the historical-geographical development of this area are necessary to shed light on the general cultural-geographical circumstances. The beginning of this period was marked by a great schism or schism in the Christian church (1054). This act was preceded by

centuries-old disputes over various theological-dogmatic and church-administrative issues. The consequence was the severance of communion between the Roman Catholic and Orthodox Churches. The main theological dispute concerned the Western teaching of the double descent of the Holy Spirit from the "Father and Son" or briefly described as Filioque (Filioque lat. conjunction "and"), which was not accepted by Eastern Christians. Another big reason (church-administrative) referred to the violation of the principle of church catholicity, i.e., the ambition of the Roman Church (the Pope) to impose its authority on the entire Christian world. This event will strongly mark the character of all "misunderstandings" between the West and the Balkans, which have lasted for a whole millennium and are recognized in numerous processes, from the Crusades to the policy of proselytism. From this perspective, the Balkans (through the eyes of the West) (Vatican, Venice, Austria, Hungary) are viewed as a different space. In the postmodern language, this could be described by Foucault's term heterotopia, or a transitional state characterized by socially unacceptable behavior, i.e., a place that disturbs the established order and principles of civilization. At the same time, E. Soja defined this notion of Foucault as the Third Space, which is proof of the inventiveness of the colorful world. It is characterized by numerous and different cultural traces from the medieval period, and sacral monuments stand out with their significance and number. These are the most visible remains of the monumental heritage of the Middle Ages, which were built in different historical styles and most often reflect the unity of cultural stimuli that came from the environment (Byzantium, Venice, Hungary), with specifics of local political and cultural (religious) development. Even today, they capture our attention with their original architectural solutions, which we also recognize as historical styles. Monuments from late antiquity (up to 476) and the early Christian period (200-500/700) were discovered on the territory of BiH, which mostly belong to Byzantine art. Of great importance for the development of art in our area was the penetration of new artistic achievements (XI century), called the Romanesque. This art is recognized in church architecture by several peculiarities, from construction to the general assembly. In addition to monumentality, the characteristic form is the three-nave basilica in an elongated (Latin) cross. This construction can be found on the Adriatic coast and in Raška (mostly in the 13th century). These churches will leave a significant mark on the architecture of Serbian monuments and at the beginning of the 13th century. The Gothic style emerges. Like the previous one, on the territory of BiH, there are only fragments of cultural monuments built in this style. In today's states of Serbia, Bosnia and Herzegovina, Montenegro, and part of Croatia, Byzantine art was dominant in this period, i.e., old Serbian church architecture. Numerous churches and monasteries of the Serbian Orthodox Church testify to it as the most important monuments of this period. There is no accurate data on construction or renovation for many of them. Still, based on written documents, one can get a picture of these most important monuments of the middle Ages, which have threefold artistic value (architectural, painting, as art objects). According to the stylistic peculiarity and the way of building church buildings, Simić (2000: 163) divides this period of Serbian church architecture into five periods: Pre-Nemanjić, Nemanjić, Milutin's time, Moravian school, and the period of Turkish occupation. When it comes to the medieval cultural heritage of the Roman Catholic Church in BiH, it is many times smaller in several monuments compared to the monumental heritage of the Serbian Orthodox Church. Material sources that indicate the development of social processes during the Middle Ages in today's BiH are scarce. This refers to written documents based on which the historical-geographical image of this area was created. Even without an extensive presentation of medieval historical and geographical contents within the studied area (colonization of Slavs, emergence of Christianity and writing, formation of nation-states, their rise, and final fall under Ottoman rule), changes in the spatial structure of the studied territory can be seen more clearly considering geophilosophy. The process of its first reterritorialization. It is a consequence of the action of various forces of "chaos, disorder, variation, liberation, mobility and infinity," which have produced a new political-geographical reality, i.e., creation of the first Slavic political-territorial communities. In the domain of the influence of these forces in the space-time system, we recognize the most significant changes in the domain of population. The process of ethno genesis within the complex Slavic stratum (probably, members of other ethnic communities: Avars, Huns, Scythians, Goths ...) and indigenous population (Illyrian tribes), began the differentiation of certain cultural groups, which after a long period of construction will culminate by the formation of a nation-state) become nations.

Table 2: First reterritorialization of the Central Balkans

Land	Smoothnes	Territory	Consecuences
Iliricum	– barbarian incursions and disorder, – variation of birth rate, – chaos after the fall of Rome, – military mobility, – the idea of liberation through state superiority, – the idea of infinity in the form of cyclic time.	Raška Duklja Bosnia Herzegovina Slavonia Dalmatia	– stabilization of settlements, – population growth and assimilation, – the first state-building Slavic communities, – agrarian mobility, – the Christian idea of salvation and eternal life, – time as a linear movement towards the end of the world.

Source: Mutabdžija, 2021: 236

Spiritual representations represent the second dimension as sublime Christian ideals. In the domain of scientific knowledge, based on dogma, geographical representations had a significantly lower level than ancient models. The Latin alphabet was lost, and the arrival of Cyril and Methodius will not happen until the 9th century. (Baptism of Slavs and adoption of the first domestic alphabet). Awareness began to build slowly that only the most robust and best organized cultural groups could survive, which is why they needed a state. On the other hand, we discern these consequences based on numerous examples, reterritorialized terms, which can be recognized in the elements of urban and political geography: empire - province, city - market, army - disorganized groups, castrum - village, limes - ruin, via - caravan the road.

V. Conclusion

This paper aimed to investigate the connection between geophilosophy and historical-geographical narratives of the Balkans. This was achieved by defining and clarifying the rules of use of basic geophilosophical terms (territorialization, deterritorialization, reterritorialization, miles) and their connection with the significant historical and geographical phases of development Balkans (prehistory, ancient period, most of the Middle Ages). This does not mean that geophilosophy was used to predict historical events. Still, on the contrary, major historical fractures, as the boundaries of the mentioned epochs, were caused by specific changes, which are recognized as rules of territorialization, deterritorialization, and reterritorialization. Based on the description of the given directions and their tabular presentation, the coincidence of geophilosophical terms and the main historical-geographical narratives was recognized.

From a geographical point of view, reading and understanding poststructuralist texts require perseverance and the application of methodological facilitations. This implies the use of reference dictionaries and papers, so with the application of clear rules for interpreting Deleuze and Guattari texts, it is possible to make geophilosophy a practical tool for dealing with historical-geographical topics. It was confirmed by the use of etymological explanations (Earth and territory), specific allusions (e.g., a shopping mall in the early Minoan period), the use of diagrams to explain various processes (territorialization), and finally, a concept (theory) of geophilosophy of the territory. The purpose of applying this toolkit is to recognize the diversity of natural and social factors and their rhizome connection more clearly, which has conditioned this historical and geographical development of the central Balkans.

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Memberships

Fellows/Associates of Social Science Research Council

FSSRC/ASSRC Memberships

Introduction

FSSRC/ASSRC is the most prestigious membership of Global Journals accredited by Open Association of Research Society, U.S.A (OARS). The credentials of Fellow and Associate designations signify that the researcher has gained the knowledge of the fundamental and high-level concepts, and is a subject matter expert, proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice. The credentials are designated only to the researchers, scientists, and professionals that have been selected by a rigorous process by our Editorial Board and Management Board.

Associates of FSSRC/ASSRC are scientists and researchers from around the world are working on projects/researches that have huge potentials. Members support Global Journals' mission to advance technology for humanity and the profession.

FSSRC

Fellow of Social Science Research Council

FELLOW OF SOCIAL SCIENCE RESEARCH COUNCIL is the most prestigious membership of Global Journals. It is an award and membership granted to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Fellows are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Fellow Members.

Benefit

To the institution

Get letter of appreciation

Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.

Exclusive Network

Get access to a closed network

A FSSRC member gets access to a closed network of Tier 1 researchers and scientists with direct communication channel through our website. Fellows can reach out to other members or researchers directly. They should also be open to reaching out by other.

Career | Credibility | Exclusive | Reputation

Certificate

Certificate, LOR and Laser-Momento

Fellows receive a printed copy of a certificate signed by our Chief Author that may be used for academic purposes and a personal recommendation letter to the dean of member's university.

Career | Credibility | Exclusive | Reputation

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ASSRC

ASSOCIATE OF SOCIAL SCIENCE RESEARCH COUNCIL

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Associates can publish articles (limited) without any fees. Also, they can earn up to 30-40% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.

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Associate	Fellow	Research Group	Basic
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Certificate, LoR and Momento **2** discounted publishing/year **Gradation** of Research **10** research contacts/day **1 GB** Cloud Storage **GJ** Community Access	**Certificate,** LoR and Momento **Unlimited** discounted publishing/year **Gradation** of Research **Unlimited** research contacts/day **5 GB** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**Certificates,** LoRs and Momentos **Unlimited** free publishing/year **Gradation** of Research **Unlimited** research contacts/day **Unlimited** Cloud Storage **Online Presense** Assistance **GJ** Community Access	**GJ** Community Access

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
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7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
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- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Social Science Research Paper

Techniques for writing a good quality homan social science research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of homan social science then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.
Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

19. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

20. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

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Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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