

# The Process of Institutional Resilience in the Republic of Perú

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**Abstract:- We focus on the process of institutional resilience in Peru and, we take into account the characterization of phenomenological impacts. We indicate the sectors and economic activities that are affected and also explain the resilience process and the relationship with sustainable and sustainable development. We incorporate the risk of disasters and the importance of institutional operational continuity, through the use of T+I+i Information Technology, Intelligent and Logical Platform and Technological Infrastructure tools. The proper articulation allows to contribute to achieve, consolidate and ensure the Social, Economic, Environmental and Technological Development in the Republic of Peru.**

**Keywords:- Resilience; Climate Change; National Security; Sustainable Development; Disaster Risk; Prevention.**

## I CHARACTERIZATION OF THE PHENOMENOLOGICAL IMPACT ON THE COUNTRY

The news of greater social, environmental and economic impact for Peruvian citizens has been precisely, to tell us that, in the last forty years the Peruvian territory and its inhabitants have been exposed to the effects of climate change, expressed and translated by the Phenomenon of the Child and the Coastal Child (also known as The Child 3 and 4 phenomenon), widely used by Nasa (National Aeronautics and Space Administration) and the Noaa (National Oceanic and Atmospheric Administration). As for the manifestations and repercussions throughout the Peruvian territory, <sup>12</sup> we can take into account natural phenomenology, becoming "one of the most important experiences for the impact on Peruvian society, so we achieved locate four episodes and three of them are related to the occurrence of heavy rains in the macro-northern region comprising the departments(Regions) of Tumbes, Piura, Lambayeque and Liberty; the first happened in the biennium 1982-1983, the

second to be carried out during the years 1996-1997" and the last, experienced short ly ago, referring to the 2017-18 biennium; torrential rains covered the coastal area and part of the country's mountains and, it surpassed daily ten liters per square meter per day, in the summer months, from January to April of the years indicated"<sup>3</sup>

The fourth episode corresponds to the natural phenomenology of the occurrence of the earthquake, with epicenter in the city of Pisco, located 300 kilometers south of the capital Lima, this phenomenological event was of equal importance and affectation in society and demonstrated on 15 August 2007.

These four episodes are understood and noted as especially particular, so, in the post-disaster stage, the functional, operational and administrative organizational capacity of the National Institute of Civil Defense (Indeci), and unfortunately it was overcome and exceeded in the action to deal with post- disaster situations, in addition in those years there were other phenomenal events such as heavy rain, floods, erosions, huayco, landslide, hail, frost, frictions, earthquakes, earthquakes, avalanches, etc., resulting in "the poor government organization and poor articulation to deal with these critical situations", which left us substantial and millionaire damage to livelihoods, to the national infrastructure, public and private institutions and, most regrettably, the loss of human life.

In the country the population density on the coast concentrates 53.6% of inhabitants, with the use of 12% of territory, which inevitably increases the vulnerability, compared to the mountain range (37.1% of population in 30% of the territory) and jungle (9.3% of the people living in 58% of the territorial area).<sup>4</sup>

In addition, according to the UN intergovernmental group of scientific experts, Peru is rated as the third country in the world most affected by global warming and climate change.

1. *The National Aeronautics and Space Administration, Nasa, Uses*
2. *The National Atmosphere and Ocean Administration, Noaa, Usa*
3. *Indeci, lessons learned, 1983, 1997 and 2006.*
4. *Inei National Institute of Statistics and Informatics, Census 2013, limenoPeru*

## II. CHARACTERIZATION OF SECTORS AND ECONOMIC ACTIVITIES

In this context, the Universidad Nacional Mayor de San Marcos and the Graduate School of Systems Engineering and Computer Science - UNMSM, must address these issues with relative importance and, "they are satisfied to address one of the priority axes for the country as it turns out to be climate change and the ramifications of phenomenological events of natural, anthropic (man's hand) and mixed (nature and man intervention), which contribute to generating the climate of stability for development sustainable and resilient people and institutions in the country; from there, it emerges through scientific research studies, on the consequences and impacts on the country's seven economic sectors, (Sunat, 2015, web portal) such as: industrial agricultural sector, fisheries sector and aquaculture, energy, mining and hydrocarbons sector, construction industry sector, manufacturing sector, goods marketing sector and finally other services sector.<sup>5</sup>

According to the Uniform Industrial Classification-CIIU and Sunat, in the country "thirty-one economic activities are carried out, all of them progressively associated by the large virtual network and the Internet, through the technology tools of the T+I+i information, Intelligent and Logical Platforms and Technological Infrastructure, used by people, public institutions, private institutions and non-governmental organizations, where for the Peruvian case we will name the most important ones as: refining petroleum, meat products, sugar, food, beverages and tobacco, textiles, leather, footwear, chemicals, plastics, metal products, non-metallic products, iron industry, steel, copper, silver, gold, electricity, water, transport telecommunications, financial intermediation, health, education, among those of greater relevance.<sup>6</sup>"

## III. CHARACTERIZATION OF SOME EVENTS BY CLIMATE CHANGE

When it comes to deepening and expanding the management of human knowledge concerning climate change and the expression of important natural, anthropic and mixed phenomenological events, we must necessarily relate it to:

- The Child Phenomenon, the Girl Phenomenon.
- The Coastal Child Phenomenon (now known as Child

- Phenomenon 3 and 4).<sup>7</sup>
- Disaster risk management of national, subnational and municipal (local) government.
- *Disaster risk prevention in public and private institutions.*
- Reconstruction as the seventh key process of disaster risk management.
- *The sustainable environment and investment-society-environment.*
- The protection of people, and livelihoods.
- *Use technological tools and information systems to ensure operational continuity.*
- Illegal mining, indiscriminate logging, environmental pollution and illegal supplies.
- Disease from epidemics, AIDS – HSV, tuberculosis, dengue, cholera, measles, etc.
- Vulnerable areas for indigenous communities, others.
- *Climate change, scientific and technological cooperation, the Enfen, the Cenepred, the Indeci, Senamhi, Imarpe, IGP, etc.*
- Antarctica, Peruvian presence, scientific research and development,
- Recognition of indigenous communities, culture, rights, others.
- Natural phenomenological events such as: *rain- flood, huaico-slip, hail-ice, earthquake-earthquake, avalanche-drop, tsunami-tsunami, electric dry storm (TSE)-ray, strong wind-storm, fire-lava flow, pollution-spill, spillage-vandalism, explosion-violence, terrorism and third-party action.*
- Strategic natural resources, flora, wildlife, ecological.
- Mining, agricultural, hydrobiological, industrial production resources.
- The National-SEIN Interconnected Electric System, renewable energies, hydroenergy, hydrocarbons, natural gas, others.
- Scientific research in Antarctica, Peruvian presence and development of environmental projects.
- Nuclear energy, development and implementation policy in sectors.
- Conservation and rational use of water, protection to the Amazon basin, water sources, rivers, lakes, others.
- Protection and operation to the Hydroenergy Plants of Mantaro, Chilca, Duck Canyon, Charcani I, II, III, IV and V, others.<sup>8</sup>
- Petro Perú facilities, Norperuano Pipeline, La Pampilla Refinery, others.

5. Sunat, 2015, vision, mission, [pei-2018/index/public](http://pei-2018/index/public)

6. (Pennsylvania State University, 2014)

7. [https://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory](https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory)

8. [www.osinergmin.gob.pe/pei/publicacióndse.2017](http://www.osinergmin.gob.pe/pei/publicacióndse.2017)

#### IV. CHARACTERIZATION OF THE RESILIENCE PROCESS

First, we will refer to the scientific etymology, derived from the concept of Resilience, which comes from the Latin term "resilio",

Which means the ability of steel to recover its initial form despite the blows it may receive and despite the efforts that can be made to warp it, "turn back, come back from a jump, highlight, bounce." (Wikipedia,2019, Resilience, p.2)

From the 1990s on, this term was also adapted in the field of medicine, in use in the branch of psychology and also to other social sciences to refer to people who, despite suffering stressful and adverse situations, are not psychologically affected by them.<sup>910</sup>

As of March 14, 2011, in accordance with the creation of Law No. 29664 - National Disaster Risk Management System - Sinagerd, we are told that the word resilience is known's:

*"the ability of individuals, communities, companies and institutions in the economic, social, political, cultural and environmental sectors to overcome situations of the impacts of natural, third- and mixed phenomenology and, to regain the status normality and continuity of organization, operation and operability, in the shortest possible time. (Law No. 29664- Sinagerd, p. 25).<sup>11</sup>*

We will cite a brief example of use in the energy and mines sector by regulator O Osinergmin, which says: *"Resilience, is known as the ability of concessionaires in the electricity and mining sector to overcome situations of impacts of natural, third- and mixed phenomenology and, achieving the recovery of the normal and continuity of the supply of electricity, mining production and integrated services, in the shortest possible time".*

#### V. A BRIEF APPROACH TO SUSTAINABLE DEVELOPMENT AND SUSTAINABLE DEVELOPMENT

The effort to achieve sustainable development within the framework of globalization and, in a certain time, necessarily leads us to partner with the large virtual network and the Internet, through the tools of Information Technology T+I+i, Platform Intelligent and Logical and Technological Infrastructure, used by people, public institutions, private institutions and non- governmental organizations, worldwide, which has inevitably led to building and operationalizing the systems of communication, marketing, economic and financial transactions of goods and services, and more, in real time; in this context, the development of countries, always seek to establish common and integrated efforts involving

human talent, and as a fundamental part, is inherent in the functioning of the proper management of resources and potentials that must be oriented, associated and articulated, in processes, threads and systems with the national and priority objectives of the Bicentennial Plan 2021 and the National Agreement, referring to the following three dimensions: <sup>12</sup>*i. social, political and cultural; 2. Economic, financial and capital goods; and 3. Environment, science, technology and innovation.<sup>13</sup>*

The next expected and, compromising the aspirations of countries, would be to place ourselves in the context of sustainable development, which means, to stay as long as possible, under these conditions of development, that is, to temporarily prolong the status quo, under the dynamic radiation that is contemplated in vision, mission, missionary objectives, values, ethical behavior, among those of greater relevance. Looking at the time horizon under these prerogatives and fulfilling them, we will surely be helping to generate common well-being, security and trust for public and private citizens and institutions.

#### VI. SOME AXIOMATIC REFLECTIONS ON DISASTER RISK

Below are the following phrases of reflections, which can help us understand the varied meaning of those who promoted this concept at the time, among the main ones we have:

*"The only advantage of playing with fire is that you learn not to burn." (Oscar Wilde, 1854-1900, Irish playwright and novelist.)*

*"I don't regret at all that I took all the risks for what mattered to me." (Arthur Miller, 1915-2005, American playwright.)*

*"Accept the risks, all life is but an opportunity. The man who goes the furthest is usually the one who wants and dares to be." (Dale Carnegie, 1957)*

*"Take a risk and ask important questions. Don't be afraid to make mistakes, if you don't make them, you're not getting far enough." (David Packard, 1912-1996, American electrical engineer and entrepreneur, co-founder of Hewlett- Packard.)*

*"The risk, the negative side of the competition is the risk, the injuries, and this is one of the parties that are not missed." (Alex Crivillé, Spanish motorcycle racer.)*

After knowing the ideas and reflections related to the risk of disasters, we can add that "the notion of risk, in its broadest and most understandable conception, exists from the beginning of human existence on planet earth, and is basically related to the individual and collective survival instinct, the desire to quench hunger and thirst, and finally seek to be safe (protection and safety of continuing to live), and we are evoking ideas about preventing the loss of life and harm associated with dangers and threats in the various spheres of human activity carried out by man to this day.

In the task of national development, it must also be recognized that since the beginning of the millennium "the notion of risk is inherent in the idea of enterprise and the search for a dynamic balance in the advances of human knowledge, on common well-being and profitability under certain conditions of probability and uncertainty."

By specifically referring to the *problem of disasters-circumstances or social conditions in which society, public and private institutions are significantly affected by the impact of phenomenal events of various origins, such as such as earthquakes, hurricanes, floods or explosions, with consequences in terms of the interruption of their normal life and their frequent levels of operation (operational continuity of public and private institutions)*, we are faced with a notion or particularized risk concept, what we can call "disaster risk" or "risk that sights the future disaster."<sup>14</sup>

This risk constitutes a subset of the "global" or total risk, when considering the interrelationships between its multiple parties, there is close relationships with the facets with which the overall risk is described, such as:

- Financial risk<sup>15</sup>,
- Credit risk,
- Health risk,
- Technological risk,
- Risk in transport,
- Maritime risk,
- Airport risk,
- Aeronautical risk,
- Food risk,
- Medical risk,

- Risk of contamination,
- Sports hazard,
- Aeronautical risk,
- Sports risk,
- Risk of transit,
- Mining risk,
- Agricultural risk,
- Urban risk,
- Air risk,
- Electrical hazard,
- Risk of personal accidents,
- Health risk,
- Other risks.

**VII. LA OPERATIONAL CONTINUITY IN DEVELOPMENT AND NATIONAL SECURITY**

The security of countries is fully linked to economic, social and political development; one of the people with the highest authority and presence is Kofi Atta Annan (Kumasi, Ghana, 8 April 1938), who was the seventh secretary general of the United Nations, a position he held from 1997 to 2006, and was awarded, along with the UN, the 2001 Nobel Peace Prize.

"No development there is no security, with development if there is security"  
 "Education is the most effective defense spending out there."  
 "There is a new universal understanding that market forces are essential for sustainable development."  
 "If information and knowledge are central to democracy, they are conditions for development."  
 "Education not only enriches culture... It is the first condition for freedom, democracy and sustainable development."



Fig 1:- Source: Presentation of phenomenological impact on public and private institutions in the Republic of Peru.

## VIII CONCLUSIONS

Climate change is leading to actions and behaviors in society, as a result of the experiences of the phenomenological impacts recorded over the last four decades, forces us to walk in the direction of (public and private) resilient individuals and institutions and, it means, seek the reorientation of efforts, to create the appropriate conditions for the operation and continuity of productive activities of goods and services at the closely associated with the use of T+I+i Information Technology, Intelligent and Logical Platform and Technology Infrastructure tools.

In this context we must focus on ensuring coexistence and mutual collaboration, through the balanced consumption of natural resources, both for the present and the future, which materialize dynamically intensively in the seven sectors of the economy and thirty-one activities in the country, which represent the key role of lever to achieve, consolidate and ensure Social, Economic, Environmental Development and Technological Organization in the Republic of Peru.

## REFERENCES

- [1]. The National Aeronautics and Space Administration,
- [2]. Nasa, Uses
- [3]. The National Atmosphere and Ocean Administration,
- [4]. Noaa, USA
- [5]. Indeci, lessons learned, 1983, 1997 and 2006.
- [6]. Inei National Institute of Statistics and Informatics,
- [7]. Census 2013, Lima Metropolitan
- [8]. Sunat, 2015, vision, mission, pei2018
- [9]. [https://en.wikipedia.org/wiki/Resiliencia\(psychologis\)](https://en.wikipedia.org/wiki/Resiliencia(psychologis))
- [10]. Coleman, Daniel. Resilience and emotional intelligence. HarvardBusinessReview.2018.pag.35
- [11]. [www.cenepred.gob.pe/texto Law 29664](http://www.cenepred.gob.pe/texto/Law%2029664), p.25
- [12]. (Pennsylvania State University, 2014)
- [13]. (Bunge, Mario, 1983)
- [14]. (Hernandez Sampieri, Fernandez Collado, & M., 2014)
- [15]. (Merino Palaces, Luís, 2018)
- [16]. (Merino Palaces, Luis, 2017)
- [17]. (Muñoz Cañavate, 2012)
- [18]. (Wikipedia.org, 2012)
- [19]. (Development, 1987 August)
- [20]. (Lizardo Narváez, 2009) (18) (PCM, 2011)