Sharing and developing a Model for Primary Territorial Prevention: the Ecodistrict

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SUMMARY

Introduction: the Models of Primary Territorial Prevention (MPTP) and environmental legislation in force do not protect environmental matrices (air, water, soil) from linear productive activities that do not separate the technical and biological cycles. Hence, they introduce pollutants that increase disease risk, alter and subtract the matrices from the common uses of the inhabitants and damage the homeostasis of ecosystems and habitat of other species.

Objectives: activate a shared process for defining and experimenting a MPTP that:

a) safeguards environmental matrices from pathogenic and unsafe uses;

b) rebalances the related power asymmetries;

c) has positive impacts on health, environment, the economy and territorial management.

Materials and methods: Creation of meaning, meta-organization, investigation/with research, are used to activate a process of shared development of a MPTP which include territorial committees of the involuntarily exposed, environmental associations and local authorities as well as motivate present social knowledge to participate in the enrichment of the model.

Results: A first set of results concerns:

1) shared conceptual bases (systemic approach, circular economy, criteria for effective management of the commons) and 1.2) analysis of processes connected with linear production activities (risk production, disposals and negative externalities) that base nominations (risk producers, involuntarily exposed) more suited to the real impacts produced and 1.3) the constitutive characteristics of a MPTP capable of preventing them, *the ecodistrict;*

2) a second group of results documents 2.1) application developments (first activation of the ecodistricts

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in defined territories, law proposal for the ecodistrict, audit characteristics on the state of the matrices); 2.2) potential emerging obstacles and 2.3) implementations in place.

Discussion and conclusions: concern the methods aspects connected with the sharing processes and the impact of the ecodistrict MPTP on health, environment and economy/management of the territories.

Addressed issues

"To repair is twenty times more difficult than to prevent!" A quotation by the Swiss philosopher Henri-Frédéric Amiel (1821-1881) is given at the opening of the European Parliament "Endocrine disruptors: From Scientific evidence to Human Health Protection" (1). The quotation serves to arm the reader from the possible increasing concern that she/he may have after reading the publication. The latter points out the effects of endocrine disruptors and ways of reducing their spread through a much hoped-for improvement in European legislation, which has so far been distracted or absent. A concern possibly consolidated by reading reports on the state of environmental matrices, such as ISPRA (Higher Institute for Protection and Environmental Research) 2018 Environmental Data Yearbook (2) where taking stock of the quality of air, water, soil, built environments, etc. in Italy - a complex situation emerges in which there is no lack of a realistic representation of environmental degradation affecting our peninsula in general, the shallow and deep slopes, as well as specific contexts such as the Po Valley. A territory among the richest and most developed in Italy where environmental and health protection are implemented by the best national public administrations - and where the complex of environmental matrices is so heavily polluted that it is difficult to think of a path of restitutio ad integrum. Romagnoli, Neri and Pala (3), in a case analysis on the Sites of National Interest (SIN) Terni Papigno, show that, while respecting the integrated environmental authorization, in the Terni Thyssenkrupp Steel plant, every year from 2007 to 2015, between 1 and 1.5 tons of IARC (International Agency for Research on Cancer) Group 1 carcinogens, epigenotoxic compounds, endocrine interferers and substances with proven multiorgan toxicity, have been issued. So much so that in some international scientific publications dedicated to innovative environmental characterization systems, it is stated that the city represents an excellent context for experimentation, being "one of the most polluted cities in Central Italy" (4-5). On a global level, things do not get better. In a recent Lancet report (6), an alarm is launched regarding delays and disapplications of the Sustainable Development Goals (SDGs) (7-8). Despite rhetorics of the big decision-makers, the 17 areas of intervention concerning important variables to govern - in turn divided into approximately 170 targets monitored for application in more than 190 countries around the world -

show decisive delays and often substitutions or reversals of the objectives with respect to the policies indicated as necessary. The 2030 SDGs will not be achieved, which, given the devastating effect of the negationism promoted by US supremacists, also questions which methodologies can ensure sharing processes that create meaning for long-term commitments by all involved.

The National Plan for Prevention 2020-2025 (9) contains a series of merit indications that are fully acceptable with environmental prevention even though the level of sharing reached with polluted and local authorities is unknown. The multiplicity of programmatic instruments proposed could thus suffer in the application phase, invalidating the conditions for effective intervention in degraded and/or risk situations (SINs, large cities, territories with unhealthy industries or agricultural or industrial specializations with high environmental impact,); in addition to a lack of assessment of the effectiveness of this approach in previous years. Our territorial experience, especially in polluting activities carried out by stakeholders with considerable economic power, are floundering because unable to produce significant documented reductions in risk exposures and could benefit from the availability of a Model of Primary Territorial Prevention (MPTP) that involves positive impacts on health, environmental and economic management plans.

This article aims to contribute in resolving this problem and is the result of several years of work carried out in Umbria, to develop a shared MPTP.

Objectives

a) activate a shared process for the definition and experimentation of a MPTP;

b) safeguard territorial environmental matrices as they are distal determinants of health, from careless uses;

c) rebalance the power asymmetries among polluted and polluters;

d) guarantee advantages of the model in both health and environmental plans as well as the economic management of territories.

Methodology

The International Society of Doctors for Environment¹ (ISDE) advocates exhibits by producing research and guidelines on health and the environment based on the best scientific evidence and produces appropriate declinations of the precautionary principle without conflict of interest. The methodological indications of the World Health Organization, with particular reference to those relating to health promotion (see Ottawa Charter (10) and subsequent developments) and primary environmental prevention (Ostrava Charter (11)), as well as evaluations by related research entities

¹ www.isde.org

such as IARC, are taken as reference.

On this basis, advice is offered to citizens, territorial committees and local authorities, as well as interactions with national and supranational institutional levels that intervene in the field of environment and health, aimed at representing risks and benefits of individual choices.

The advocacy activity planned by the ISDE statutory, in view of the numerous challenges found in the regional territory (SIN Terni Papigno, presence of unhealthy Group1 industries - classified under Italian standards in the 'most pollutant industries' category - or polluting in other territories, energy production challenges, waste cycle management, pesticide use in agriculture, forest/woods exploitation...) has been interpreted and developed in a range of methodologies aimed at:

- "sensemaking" for the proper activation of citizens against polluting activities, following the indications of Karl Weick (12), for which the external world, although it exists in itself, does not have its own intrinsic meaning but only what we attribute to it; therefore it is not possible to know the outside world and interact with it except within our processes of creation of meaning, based on normative cognitive maps. If "sensemaking" means creating a mutually validated grammar for reducing ambiguity, processes of creation of meaning can be developed through: the activation of an interpretative context, also based on shared practices of nomination, aimed at identifying structures and connections; the selection of many ambiguities, confusion and interpretative uncertainties; the retention of information centered on new cognitive maps, redefining the pre-existing ones;
- to make use of available scientific evidence on health and environmental effects of polluting substances and installations with a view to health promotion and primary prevention;
- develop initiatives targeted to create conditions in which citizens are more likely not to be exposed to risk through approaches based on "co-research" (13) and "meta-organization" (14) meaning priority acquisition practices and potential solutions shared with those experiencing health problems related to alterations in environmental matrices (air, water, soil). Aiming not to tell the polluted what should be done but rather create cognitive and operative conditions in which they could permanently, well-manage the activated disputes therefore protecting the territorial matrices in which they live and work.

At the operational level, the development of the model has been concretized as an open process which, for descriptive purposes, has developed in several phases:

a) in phase one, together with the provincial sections of Perugia and Terni, a network of relations with local committees and environmental associations has been built;

- collaborating in risk and epidemiological analyzes connected with the manage-

ment or activation of specific production activities evaluated with high environmental impact;

- conducting bibliographic research, ad hoc studies and surveys at different structural levels (3-15, 16) to gain knowledge about the concerns and experiences of the citizens;
- producing content analyzes aimed at bringing out shared visions, orientations and assumptions, as well as related problems and models useful both for the proper conduction of specific disputes and for finding overall solutions to the management of health, environment and economy, in defined territories.

In this phase, particularly structured interactions were developed with the Umbrian Zero Waste Regional Coordination. In 2017, the need to work on the definition, experimentation and implementation of a primary territorial prevention model centered on a shared definition of clear fundamental characteristics emerged unanimously.

b) in phase two, up to the present, work has been done to refine the characteristics and functions of the model during interactions with the various environmental disputes, depending both on the evidence produced by the studies mentioned above and on the indications that gradually emerged on the characteristics and functions of the model recognized as productive in real contexts. In addition to the enrichment and knowledge of the citizens involved (doctors, teachers, architects, agronomists, lawyers, chemists, systems engineers, sociologists, journalists, local administrators, ecologists, eco-feminists, people with a strong civic sense and environmental sensitivities, etc.). During this period:

- an important interaction took place with the University of Perugia's Law Clinic (17), and produced, by popular initiative, a regional law proposal for the activation of the ecodistrict MPTP;
- the first experiments carried out with different levels of interaction from opposition to collaboration with the local authorities, of the model in relation to the activation of moments of consultation (audit) from a particular structure, of which will be referred to in the results (Terni, Borgoglione, Gubbio);
- implementations of the model have been developed relating to urban contexts, agriculture, methods for measuring the costs that polluting activities produce both in direct terms (costs of lost health and polluted matrices) and indirect terms (costs to be incurred for territorial reclamation and redevelopment), evidence of effectiveness of defined solutions (e.g. actual micro-organisms) in difficult decontamination activities.

Overall, the combination of these methodological choices in the two phases briefly described, has led to a first level of definition, experimentation and implementation

of the ecodistrict MPTP, as described in the Results section below under the three key sections of health, environment and economy. The Discussion section addresses both the methodological problems connected with the sharing processes and integration between environmental characterization and inferential epidemiology, and the expected performance of the model.

Results

1) The "Ecodistrict" Model of Primary Territorial Prevention and its current characteristics This section summarizes the results of the processes of observation, interaction and sharing. Conceptual and observational bases that have founded the name of the proposed MPTP, nomination of main stakeholders and functions as well as the operative articulation identified to ensure positive impacts on health, environment and territorial economy and management.

1.1. Shared conceptual bases

The complex of the supported interactions brings out a substantial shared view on the criticism that numerous authors (18, 19, 20), even belonging to heterogeneous disciplines, have developed on the limits of the current vision of "linear" economies. The latter would have in common the assumption that an objective can have, as an effect, only that for which it was onceived to be. It is a mechanistic vision in which the different components in the real world are assumed as being separate and independent from each other. In this regard, there is a growing convergence in considering the assumption of systemic models as more adequate (19, 21-22) in foreshadowing the impact of human actions, since they take into account the interactions and feedback that are given in real life, shed light on the heterogeneity of the results and, above all, impose particular precautions in choices that concern actions in the production of goods.

The two climatic and environmental crises (23) are, in fact recognized by supranational scientific organisms as a consequence of the prevailing of these linear visions in production activities (fossil energies, intensive farms, plastic production, use of pesticides, extractionist approach in the management of territories, etc.).

In light of this, since the 1970s, the international scientific community has increasingly accepted the concept of a "circular economy" (24-29) which implies, unlike that based on linear visions, the need to aim in production activities having a separation between the technical and biological cycles, which is supported in redesigning them so that cycles and products are thought of from the "cradle to the cradle" versus the current "cradle to the grave". Since the goods produced, once their value of use has been exhausted, become waste that is added to the much more abundant and

dangerous waste connected with the productive cycles of the linear economy, with a subsequent effect on the environment, health and economy. On the other hand, in the first case, the result would be goods and products characterized by a radical sustainability designed on the basis of separation between the technical and biological cycles. They would be immediately reusable as a secondary material in the case of goods, and the production cycles thus conceived would not have negative effects on health and the environment.

Separation between the technical and biological cycles advocated by the theorists of the circular economy sees its application in a real world where the organized interests of risk producers are represented preferentially where all life-important decisions are taken. This gives rise to a range of positions ranging from a non-existent problem (strong Negationist suprematist in Anglo-Saxon elites and in Persian Gulf theocracies) to a pragmatic one that is applied within the "Green New deal" where everything is entrusted to the "green" sectors of the capitalist economy (US democrats, platform capitalism and the European Union). Comprising the ambivalent development proposed by the European Union by making important financial resources available as well as experimentation in specific territories in the people's Republic of China (30-31) to the systemic globe programming proposed by the UN with the SDGs (7). If the transition into the circular economy is generally viewed favourably by those exposed to the increasing and catastrophic damage to the environment and health caused by linear productions, it has been observed that most of the implementation policies, at this stage, come from above. It is necessary to develop and test approaches thought and wanted by those at the bottom that take into account the specific characteristics of local contexts. Without an adequate role, there is a high risk of substitution and reversal of ends.

To this avail, the indications produced by economists of the common goods, and in particular by the 2009 Nobel Prize winner Elinor Ostrom and her colleague Charlotte Hess (32), who have analyzed a wide range of situations in which local communities have successfully managed common goods, ensuring effective maintenance in the long run, are considered highly remarkable. If, in general, common goods mean "goods which are property of a community and of which the community can freely dispose" (commons of the Anglo-Saxon juridical tradition), Hess and Ostrom provide a more problematic definition of the common good: "a resource shared by a group of people and subject to social dilemmas (queries, controversies, doubts, disputes, etc.)." For these authors, "a common good is free from values: its outcome may be good or bad, sustainable or not, and, to ensure lasting and stable systems, clarity is needed, good decision-making skills, and collaborative management strategies" which are summarized in a series of "rules" that are correlated with the outcome described.

In addition, for our purposes the commons' discourse assumes importance because connected with a series of important social values related to innovations that they can support since:

- firstly, a descriptive value because they identify models of government which would otherwise not be examined;
- secondly, the language of common goods is a way in which people can claim a personal bond with a set of resources, as well as social solidarity with one another;
- thirdly, a constitutive value because, by providing us with a new language, they help us establish new levels of common management based on principles that allow maintenance and maintenance over time (32, op cit.).

1.2. The nomination of stakeholders and impacts of linear productions

The observations that we have gathered investigating many environmental disputes converge in indicating that *it is precisely the productions that do not separate the technical and biological cycles* - because they are *linearly* conceived - that represent the end of the skein because:

a) they produce risks and damage to the environment and health, creating the unenviable condition of *"involuntarily exposed"* (Fig. 1) in people living and working in the *spillover emissions area*. *Involuntary exposure to risk* is, in itself, *a damage* to mental health and the quality of life, whether or not there are appreciable effects on physical health. An important point that results from this acquisition is that we can now define *"risk producers"* as productive activities that do not separate the technical and biological cycles, giving this category an objective dimension based on the risk that those activities determine, thus avoiding judgmental terminology;

b) *risk production* is always associated with *dispossessment* (16), since the failure to separate the technical cycle and the biological one implies that common goods such as air, water and soils are subtracted from common use, expropriated and contaminated; as if they were "res nullius" in a practice that exceeds both the constitutional provisions (art 42) and the "bundle of rights" - however limited in relation to the general interest - that property is seen everywhere to confer by regulations (33).



So, who's going to think about the environment and our health????

Source: Manifesto of the Environment Committee "Molini di Fortebraccio"(Ponte Valleceppi-Pretola (PG)) January 2013.

Dispossessment connected with risk productions is not limited to environmental matrices only, but also concerns:

- asset value of the involuntarily exposed who live in a spillover area of emissions since real estate value is lost (houses, land, cars, ...) creating differential hierarchies in ownership rights. Properties of the exposed are not safeguarded as those not living in spillover areas. Clearly, there is a disjunction between owners' rights, legality and environmental justice;
- the effects of partial prevention measures (prohibiting garden cultivation, farmyard animals, regulation of school accesses or accessing public spaces, ...) in spillover areas consist of further dispossessment of the involuntarily exposed;

c) risk production and dispossessment also give rise to numerous negative externalities which should be well calculated when assessing the costs and benefits of new production activities:

- the suffering inflicted onto the involuntarily exposed by living in an environment at risk;
- the consequent damage to health;
- the degradation of the territory which loses its landscape and its culturalhistorical characteristics, as well as its environmental quality which enhances

Fig.1: Naive dipiction of the concerned exposed

residency and founds the complex cultural processes that nourish the 'anthropological specificities of communities';

- the negative impact on other productive activities (tourism, agriculture, construction, etc.);
- 'biodiversity reduction', which is too often overlooked. As many naturalists point out that it is important to counteract indifference to the costs imposed on the various forms of non-human life, both because of their value as such, both for the negative feed back that the impoverishment, or more often, destruction of other life forms, also determines the conditions of the prevailing species, ours;
- the enormous difficulties and costs that arise when the polluted matrices are to be cleaned up, an operation referring to more than 40 SINs whose linear productions have created health (34-39) and environmental damages. The interventions are then not implemented, leaving more than 6 million Italians living in a state of chronic risk exposure and protracted dispossession, while, for local administrations, the costs and problems of reclamation are very difficult to face.

The authoritative authors (40) consider, moreover, the term *negative externalities* gives a shroud of occasionality to the negative effects of risk production when, in fact, these effects are not only systematic, but also important in increasing the value obtained with the specific productive activity, considering it more appropriate to say that risk production is always connected with value extraction. The linearity of risk production allows to formally ignore the damage to the environment and health, in order to avoid necessary planning and operating costs which, if not addressed, guarantee a substantial share of the profits.

1.3 Model designation and distinguishing features

It is on the three pillars of the systemic approach in the reading of reality, of the circular economy in productive activities, and territorial governance based on appropriate management of the commons that we have founded the proposal (41, 42) of activation of a MPTP, the *"Ecodistrict"*. A device for primary prevention, territorial reappropriation and valorisation. This is based on four key factors (Fig 2): **a)** taking charge of air, water and soil matrices as common goods by the community living and working in them;

b) the detection/search of substances which contaminate each matrix so as to have an adequate representation of their overall quality (characterization) and knowledge of the activities which adversely affect this quality (pressure factors);

c) the creation of favorable conditions for the redesigning of production activities

and the utilization of each pressure factor so as to achieve separation between the technical cycle and the biological cycle, using the funds available at the European and national level;

d) conducting audit cycles in which the community is made aware of:

- the limits and potentialities of territorial matrices;
- the integrity/contamination status of each matrix;
- the state of adaptation of each pressure factor to the principles of the circular economy.



Fig. 2 Constituent elements of the "Ecodistrict" Territorial Primary Prevention Model

2) Application developments, potential obstacles detected and expected implementations

2.1. Application developments. The Model of Primary Territorial Prevention in its essential characteristics referred to above, was presented (41, op cit.) at the ISDE Italia National Congress "Ecology and Prevention: It is not too late to learn to live better!", in Arezzo, in April 2019. To date, work is being done to test the activation of the ecodistricts through interaction with territorial committees, environmental associations and local authorities. While many territorial committees and some local authorities (mayors of Montegabbione and Citta' della Pieve) have shown interest in the proposal, major application developments have occurred in three territories with high environmental damage and with a strong mobilization capacity:

- the municipality of Terni, which coincides with the SIN Terni Papigno and houses, besides the plants (steel works and special waste landfill) an incinerator, and presents profiles of environmental pollution from old industrial activities (ex-chemical plant), urban traffic centered on private transport and from domestic heating. The local No incinerators Committee which has a considerable capacity for mobilization, inclusion and proposal, organized an Audit on the "Limits and potential of the environmental matrices of the Ternano ecodistrict" in January 2019 (43). It is now working on a shared definition of an environmental prevention plan as the operative link for our MPTP as well as critical issues of the SIN:

- in the Borgogiglione landfill and in the quarry of inert materials of Monte Petroso, which occupies parts of Perugia, Corciano, Magione, Passignano and Umbertide. Localities where the Borgogiglione Observatory is active and working on the involvement of local producers in the transformation of activities in accordance with the principles of the circular economy. In addition to carrying out careful monitoring of landfill management and other common goods in the area;
- Gubbio, where there are two cement factories that have requested the use of Solid Recovered Fuel (SRF) and numerous territorial committees (at least five) have organized a no SRF Gubbio Committee that has obtained, unlike the other two territories, the involvement in the dispute of the municipality of Gubbio, and has had the dexterity to create a national coordination of the active territorial committees in which Colacem Group cement factories (Gubbio, Galatina, Caravate ...) are located. As well as with other territorial committees in which other cement factories are found.

These major application developments have enabled:

- to censor a first series of potential obstacles in the activation of the ecodistrict;
- to experiment the implementation of an audit in collaboration with a local authority which represents a qualitative leap in the process of sharing and experimentation of the Model of Primary Territorial Prevention.

2.2 Potential barriers. At present, the following factors are potential obstacles for the activation of the ecodistrict:

a) Legislation in force since it bears the imprint of what Ulrich Beck (44) defined as the risk society, assuming values and parameters that protect the productions based on the "linear" approach. As demonstrated by the self-declared data in the European Pollutant Release and Transfer Register (E-PRTR) by a local cement factory, it is legal to introduce into a defined matrix of a defined territory significant quantities (in the order of tons per year) of substances already known for their carcinogenic, mutagenic, epigenotoxic, toxic to various organs as well as harmful to other living species and to the environment.

In the northern part of Perugia, four authorization procedures relating to the Borgogiglione landfill (review/renewal of AIA and VIA for a LNG plant) and the nearby Monte Petroso quarry (VIA and PAUR use of explosives in the work process and variant authorization for safety), are currently under way in the Umbria Region and the Municipality of Perugia, advancing separately and without any overall evaluation concerning the interaction and cumulation of impacts on the environmental matrices and the life of those exposed.

The ecodistrict aims to highlight the irrationality of these regulations that leave the exposed at the mercy of the risk producers and creates collective pressure both for the transformation of linear productions into circular ones and for the local assumption of management methods based on the circular economy already available in the waste, heating, local transportation and food sectors.

One should not forget that the pressure that environmental movements have developed across the world for climate and environmental crises to be effectively addressed, is creating special conditions, such as the "Declaration of the State of Environmental Emergency" adopted before the covid-19 pandemic. This can lead to profound innovation in global and local regulatory systems. Along these lines, in 2019, the Law Clinic of the University of Perugia produced, in agreement with ISDE and with the Zero Waste Regional Committee, a proposal for a regional law of popular initiative which represents a first step towards the legal formalization of the principals of the ecodistrict (45).

b) Risk producers in Terni (Thyssenkrupp), Gubbio (Colacem and Barbetti cement factories) and Perugia, have a remarkable formal and informal power and could resist our proposal of redesigning the production cycles. It is hardly worth noting that the circular economy does not foresee expropriation, although there are examples of far more circular management elsewhere, of steelworks and cement factories (46). Moreover, the "unhappy" urban locations of such Group 1 unhealthy plants can be an important topic for opening a productive negotiating table, since recent case law (47) highlights the power of the mayor as a local health authority, who can revoke authorization to operating plants who are detrimental for health and the environment;

c) Local authorities: if current legislation has cornered the municipal and district level, the proposal of an ecodistrict could give the territory and municipality greater responsibility in management of the commons, and constitute a point of convergence in order to initiate a necessary action of rebalancing local powers;

d) Regulatory agencies: ARPA (Regional Agency for Environmental Protection) and ASL (Local Health Authority) express opinions on the regularity of emissions according to the current legislation in the defense of linear production structures, while the Regional Authority on which they depend, has unfortunately, over time, taken over the management of what we define as being "linear". We have observed that this has had disastrous outcomes for our Regional Health Service. The latter implies that normally, these agencies issue opinions authorizing polluting activities,

generating strong distress in the involuntarily exposed. Moreover, without having any significant participatory role in the Department of Prevention and the ASL. The "characterization" that is required in the activation process of the ecodistrict consists not of an opinion of conformity to legal parameters, but in the description of contamination levels produced by each pressure factor which can be supplemented by parallel studies conducted by university institutions (4-5)) and the "crude" assessments of citizens' committees, contributions which are strengthened by a possible converging role of the local authority. During the many disputes that have involved us over the years, it became apparent that appropriate levels of pressure by community participation can impress the role actually played by these agencies.

e) Opposition of the exposed sectors: a further potential obstacle can be represented by the presence of substantial exposed sectors that lose the adjective "involuntary" in that they accept, as a lesser evil, exposure to risk because they fear unfavorable economic and employment consequences, and because they <u>carry the imprint of processes of social construction of the threshold of pollution tolerance</u>. Anthropologist, Lorenzo Alunni (48) wrote powerful and influential pages about this device analyzing its characteristics in the Upper Tiber River in relation to tobacco production. The audit also aims to deconstruct this threshold of pollution tolerance by providing, in a transparent and conflict-of-interest free process, adequate knowledge and interpretation frameworks to develop the opinions and convictions of these areas of exposure.

2.3. Audit in the ecodistrict MPTP

If the 'ecodistrict' is a MPTP and a process of community reappropriation in decision-making as well as a device of subjectivation of the involuntarily exposed, it moves its first steps with the audit, in other words, with a public meeting in which the available knowledge on the state of environmental matrices, the pressure factors which alter them, and the state of transformation of these are examined from the point of view of the exhibits², on the basis of circular economy principles. In Gubbio, the municipality's attention for environmental and health problems determined by the request of the two cement factories to burn SRF and the huge citizen activation and local committees to protect the territory, create an innovative and potentially

² The Encyclical Laudato Sì (18, op cit.) in verse 183 recites..."it is always necessary to acquire consensus among various social stakeholders, they can bring different perspectives, solutions and alternatives. Local residents must take a privileged place in the debate, questioning what they want for themselves and their children, taking into account the aims that transcend immediate economic interest."

productive situation.

Along these lines, the audit provides for a development based on the defined roles of the main stakeholders:

- the involuntarily exposed, through committees or directly, play a central role in defining priorities and assessing the impacts of common management;
- risk producers are called upon to propose credible, realistic and effective programs for the reengineering of production cycles aimed at separating the technical and biological cycles in their activities;
- the local authority and their territorial associations play the role of: "guardian" of the air, water and soil commons; "guarantor" of their maintenance and of transmission to future generations in the best possible conditions; "facilitator" of the criteria that can make common management sustainable.

Discussion

Basic characteristics and application developments of the ecodistrict MPTP have been exposed, considering its absence, and more generally, the absence of any MPTP provided that it is sufficiently structured to be evaluable in its impacts, a serious problem for the resulting non-prevention and, urgent because every day of nonprevention creates damage and indicates that one continues to delve into error when it is necessary to experiment new, effective solutions.

1.1 Aspects of methods

Overall, the documented process has several limitations and method problems, some of which have emerged in section 2.2, regarding the results dedicated to potential obstacles. Henceforth, problems connected with the participatory approach underlying the ecodistrict MPTP will be discussed briefly.

Leone and Prezza (49) classify methods for decision-making into three large groups rational synoptic, concertative and heuristic – depending on whether elements of "prestructuring" prevail in their methodology and therefore opt for a technocratic approach or, contributions of participation are prevalent, and therefore opt for an approach centered on sharing and taking on the needs of those living in the problem. In the technocratic approach, it is assumed that the environment is stable, the problem is clear and the objectives are transparent and desirable by all. However, often, interventions fail not because the project was technically not valid, but because insufficient knowledge or exploitation of the context leads to underestimate the presence of non-shared values or non-recognition of conflicting visions within the collectivity which should transpose and sometimes participate in its implementation. This implies boycott of the project, demotivation of the realtors and waste of money and time.

The technocratic and proprietary logics that innervate the operation of regulatory agencies (ARPA Umbria and the prevention departments of the two Umbrian ASLs, do not provide structured moments of participation of the exposed in their programming cycles, if these are actually produced and explicit) due to the twist that public policies have undergone in the last 30 years until becoming explicitly private service policies, are fully within the interpretation criteria recalled and lead to the failure/disempowering of the planning and design work that falls within these approaches. Lancet's aforementioned editorial (6, op cit.), which comments on the serious and profound delays and backlogs in the process of achieving the UN's 2030 Sustainable Development Goals, poses the dramatic problem of the structural weaknesses of the technocratic approach and highlights the distance between real and rhetorical processes. The idea that market and competition produce solutions thanks to invisible hands that actually produce real advantages in complex processes such as climate and environmental crises, that they have also determined, is not based on any evidence and should lead risk producers to come to terms with the fact that von Hajek³ is dead. Rather, we need to focus on the meta-organization of shared approaches, especially when preparing to develop and test the MPTP locally and globally.

1.2) Aspects of merits: Impacts on health, environment and economy

Impacts on health and the quality of environmental matrices

The ecodistrict MPTP assigns great centralness to the laboratory chemical analysis of the matrices phase, which, by some, could be confused with an underestimation of epidemiological studies.

De facto:

- the model valorizes all knowledge of inferential epidemiology having solid bases in scientific literature, assuming, beyond the threshold values defined by the regulations, that if a substance (or a production cycle) is known - on the basis of available epidemiological studies and without conflicts of interest - for its negative effects on health and the environment, it must no longer be introduced into the environment, thanks to the circular transformation of production. Therefore, the evidence available in inferential epidemiology is valued in the ecodistrict approach since it is in itself

³ Friedrich August von Hayek (May 8, 1899 March 23, 1992) was an Austrian-born British

economist and sociologist. A liberal and liberal thinker, he was one of the highest exponents of the Austrian school and critic of the state intervention in the economy that criticized, on the basis of the impossibility - at the time when he wrote, no longer true today - to have mathematical models and the necessary computing power to take into account the many variables when programming, which led him to exploit the allocative capabilities of the capitalist market.

sufficient to avoid emission on a given territory. While it is not ethical to activate studies to see whether, in a territory, the involuntarily exposed to a substance with known harmful effects become ill and die in such quantities as to produce significant "statistically" risk excesses;

- on the non-neutrality in the way in which statistical significance is built in environmental epidemiology studies, see section "Discussion" of 3, op cit.
- recent developments in environmental characterization activities involve the possibility of having assessments of the risk carcinogenic and non-carcinogenic of a defined territory reflecting the present risk: in Terni, The Department of Chemistry of the University 'La Sapienza' of Rome has measured, through numerous air pollutant analyzers, suitably located in defined city areas, the contribution provided to the pollution of this matrix separately for the emissions produced by steel works, incinerators (at the time of the study there were two), traffic and heating (4, op cit.) in the different districts of the city. Subsequently, a development of this study was published in which the detection of pollutants present in each district was followed by the estimation of the carcinogenic and non-carcinogenic risk, distinctly for children and adults, present in every district of the city, making it clear that the risk for children, carcinogenic and non-carcinogenic, is high everywhere compared to European standards while for adults it is higher in two districts of the city (50).

This would mean that:

- the population of an entire city is suffering the effects of a (non) MPTP which produces an impact on health that is difficult to be proud of. Children in all neighborhoods are exposed even more involuntarily than adults to a high carcinogenic and non-carcinogenic risk;
- the characterization, carried out appropriately and aptly valorised by a meta-organized self-defense action of the health of exposure, no longer involuntary - produces estimates of the *current* risk - carcinogenic and non-carcinogenic - demanding proportionate and immediate interventions of primary prevention.

Descriptive epidemiology studies detect patients and deaths from exposures that have occurred, depending on the disease models, about twenty years before, for the carcinogenic risk, even in the gestational age, consistent with epigenetic studies (51) for the non-carcinogenic one. Moreover, associations between exposure and damage that descriptive epidemiology produces can never be causative, so that further analytical studies are needed to establish cause-effect relationships for exposures that have started at an earlier point in time.

Hence:

- the advantages offered by high quality environmental characterization, such as in the ecodistrict MPTP, is available current risk estimates, a clear advantage with

respect to descriptive epidemiology studies, which, in any case, retain their value in describing the population's state of health;

- the systematic analysis of the contribution that each pressure factor - which is such until finally governed in such a way as to separate the technical and biological cycles after which it can become a factor of well-being - gives rise to the increase of carcinogenic and non-carcinogenic risk, represents a rational approach with an expected favorable environmental impact.

Impacts on management of the territories and the economy

In addition to what has emerged on negative externalities currently determined by risk producers, a territory that equips itself with a MPTP, like in the ecodistrict, investing knowledge and resources in the transformation of pressure factors on the basis of the principles of the circular economy, becomes an innovative territory on the economic ground as well since it:

- adopts and governs technological innovations which give rise to productions and activities for social purposes:
- a. is finally sustainable because based on non-polluting production cycles, which also puts an end to the grievous search for buffer solutions consisting in the removal from a specific context of risk production, transferring it to another without substantial improvements in the production cycle;
- b. is of interest to a large number of other producers and to the community;
- c. can count on substantial funding both at the European and national level, bringing together investments, resources and knowledge which are essential to bear the necessary conversion costs in the circular economy;
- d. is where produced goods have additional values of use besides that specific to each one: a) environmental sustainability because they do not give rise to waste when they no longer work; b) recycled materials immediately reusable in further cycles of the circular economy.

This in turn involves important transformations:

- in the quality of life, because living in such a territory guarantees integration between human beings and the environment, giving profoundness and subtance to existence, elements of beauty and enhancement that needlessly smoking chimneys do not offer;
- in culture as it represents a new way of living and thinking in a social context experienced on the soil of sustainable innovation, which involves the liberation of desires and the flourishing of deeply-felt, more profound practices and proposals;
- in the sense that living and working on that territory takes on, breaking with the dystopias that crowd our future.

Finally, involves the municipality in the protection of the commons, experimenting with models of common management together with citizens who take their destiny into their own hands and are no longer involuntarily exposed.

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