Next Civilization Advent Project:

Ecologizing Economics and Transition to Circularity based Society

- Lessons from Latin America and East Asia

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LEE, SEUNG MOO

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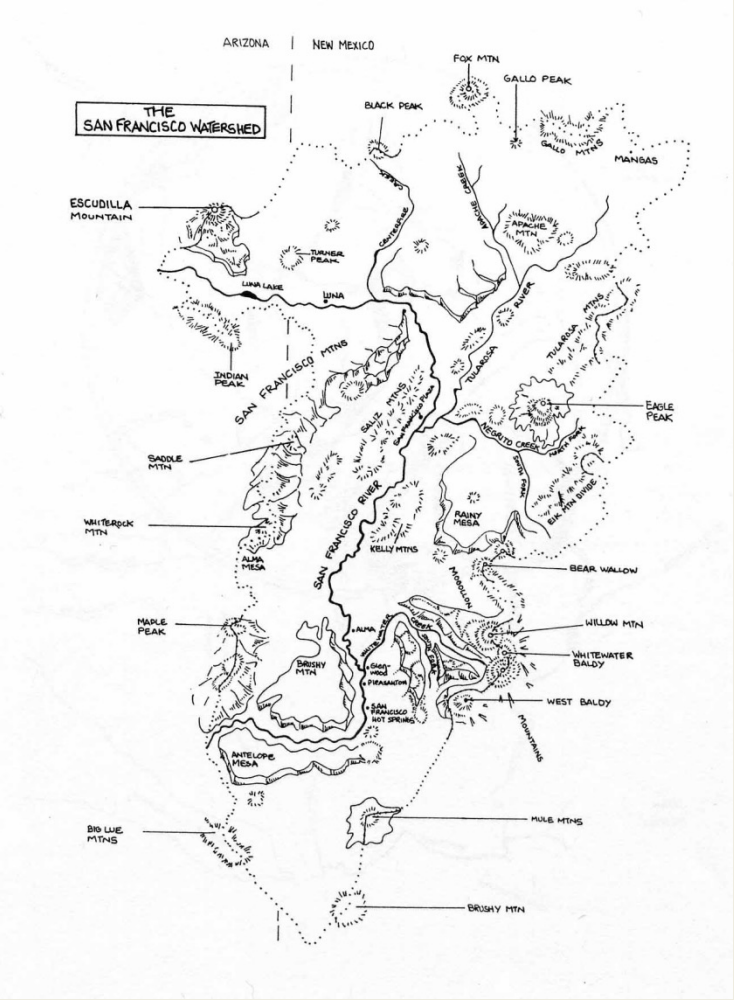
0. What to say

1. In the era of ecological crisis that requires a transformation of life styles and economic activities, we need a transformation of thinking. Our economic notion of commutative justice through free contracts has prevented us from seeing reality until it reached the crisis of system collapse due to the exploitation of human labor and the nature. This must be replaced by a new economic concept.
2. Central and South American societies, in which originally humans and the nature had coexisted and maintained circular kind of culture, experienced the rapid destruction due to the invasion of western civilization, so that they are well aware of the destructive nature in the foundations of western civilization and are trying to build a new society where, above all, humans are happy. In the Region of East Asia, we inherited self sustainable rice crop growing agricultural civilization on the basis of monsoon climate and Confucian, Taoist, Buddhist and other eastern religions that cherish harmony between the nature and humans. In an era where the need for ecological transformation becomes serious, it is necessary to share the experiences of Latin America and East Asia which have been exposed to imperial aggression and plunder and colonial rule by industrial civilization, and striving to overcome them over the past centuries.
3. One of the keys for newly reviving our common traits of harmonious inherited cultures is to open our eyes to cyclical unity (circularity in living, economy and conviviality) that was characteristic of our cultural heritages, which will be meaningful for the future of mankind that seeks peaceful coexistence with the nature. In this presentation, we examine crucial elements of circularity that can be found in our heritages and should be incorporated into the economic ideas and norms.

1. Clue : East Asia talks with Central and South America!

(1) American land and human history

Lesson from William Koethke , The Final Empire Chp . 19. Natural History of the San Francisco River Watershed.



"Gary Nabhan relates a Papago story about Coyote stealing some corn and deciding to grow his own. He ate most of the seed then threw the remainders along an arroyo. He slept all through the growing season and when it was harvest the corn turned out to be coyote tobacco, a wild plant. The problem according to the Papagos was that Coyote did not know the proper songs to sing to the corn, so it could not grow properly.

The story points up a neglected fact of the Pleistocene Native American culture and most other Pleistocene cultures -that they were cultures of song and dance. These groups had rich cultural content. There were songs for everything, for all of the natural acts. The people were given life and then gave that beauty back to the cosmos in song. They began with the real life-and extrapolated the song from there, out into the universe and into the immaterial. The song was grounded in the beauty of the earth and its forms of life."

(2) East Asian Tradition, history and Future

Confucian Philanthropism
Taoist Anarchism and anti-militarism
Buddhist Transition from material possession to internal happiness

Western Intrusion ⟹ Two kinds of modernization

Anti-imperialistic struggle
(nationalist and communist camps)

China, North Korea

Positive acceptance of western capitalistic civilization

Japan, South Korea, Taiwan

Reconciliation and reunification (harmony in diversity)
into where people and nature are all happy.

Anti-militarism/Pacifism/Ecological Civilization

With cooperation and inspiration expected from Latin America Native Wisdoms

2. Does the existing economic system reflect ' circulation in land ' ?

(1) Léon Walras' tableau économique (pure economics): the archetype of neocl assical economic ideas

category	gross income	net income	Depreciation + Insurance	Consumption	fixed capital reproduction	savings = new investment
land	2 billion	2 billion		2 billion		
manpower	5 billion	1.25 billion	3.75 billion	5 billion		
capital	3 billion	1.5 billion	1.5 billion	1 billion	1.5 billion	500 million
Sum	10 billion	4.75 billion	52.5 billion	8 billion	1.5 billion	500 million

- Unlike other factors of production, land was viewed as capital that did not require depreciation or insurance .
- Land has natural resilience, even while yielding crops and other benefits within certain limits . However, beyond that level, land function is damaged and requires artificial supplementation or long-term pause, which Walras was ignorant of . Modern environmental economics has made up for this .

(2) Land degradation and collpse of civilization: Karl Kautsky

" The expansion and viability of industrial capitalism depends on the food and raw materials procured by agricultural countries in exchange for its industrial products. It depends on the ever-growing surplus ." (Karl Kautsky , ≪Proliferation and Evolution in Nature and Society≫

" In the days of the Arabians, when oaks and yews were abundantly planted, the mountainous regions boasted of extremely beautiful forests . Since then, many forests have been cleared, but none have been planted any more, and the devastation of the remaining forests continues unabated . Charcoal burners and herds of goats compete to clear the forest, and shepherds and charcoal burners are almost the only people encountered in the mountains . In the mountainous area, even in the mountains in front of it, eyeballs are rare ." (Kosmos Handweiser fur Naturfreunde , Heft 11, Stuttgart 1909) (quoted from the book above)

There is an absolute increase of surplus production and a relative increase of surplus production.

" The method of absolute increase in production : leads to premature exhaustion and eventually complete ruin of the power of the two sources of all productive forces, the workers and the land ."
-> Absolute impoverishment of land and population

The capitalist mode of production does not belong to a mode of production that believes that men can work permanently, nor does it belong to a mode of production in which individuals feel that they are working for the whole . Each is concerned only with extracting for himself as much as possible from the common spoil, and as quickly as possible .

-> Hereafter, only the production method of relative surplus products should be used .

(3) Environmental Economics begins to think of circularity

Reference : Pearce, Turner, 1990, Economics of Natural Resources and the Environment.

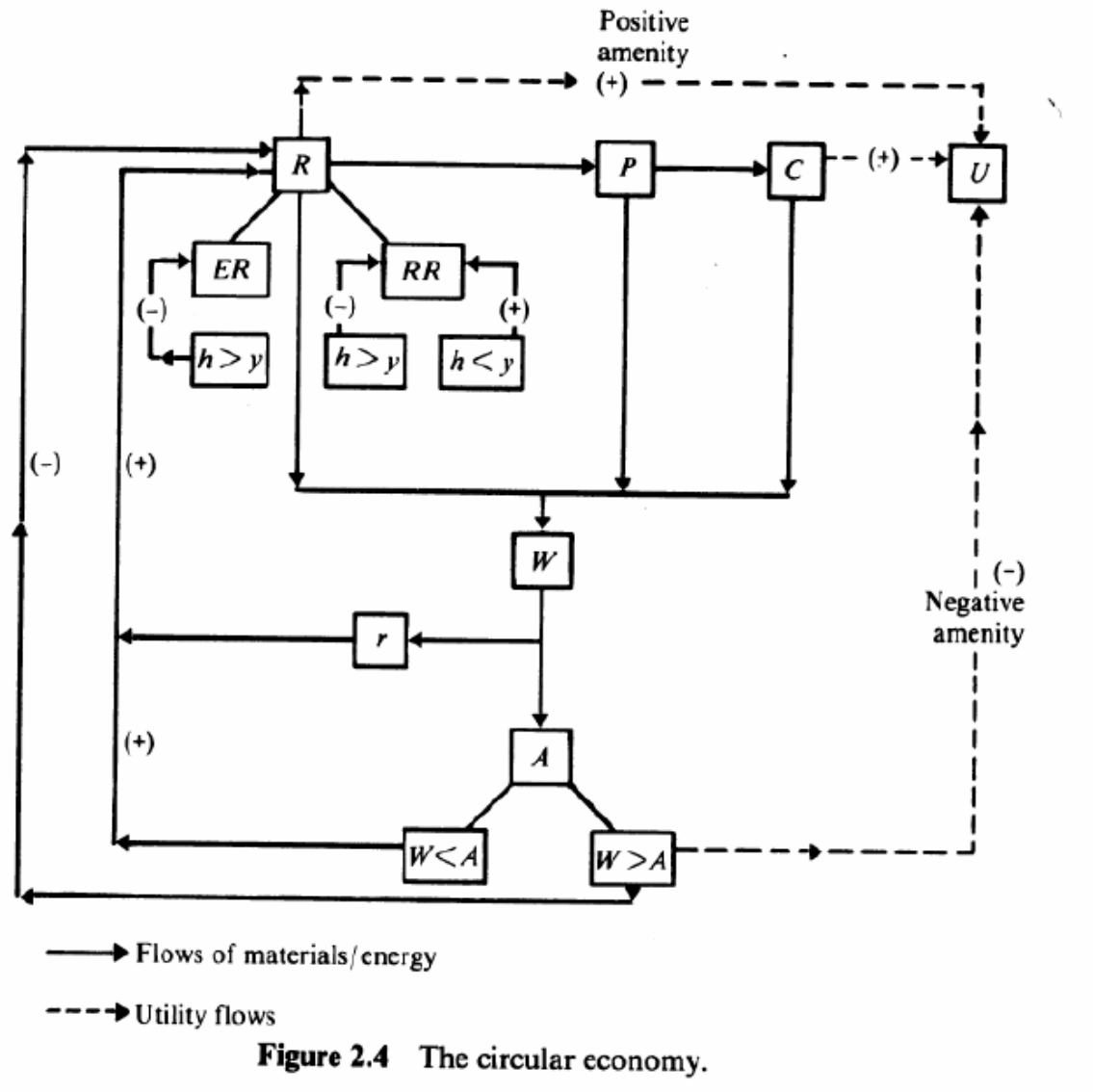


Figure 2.4 The circular economy.

R: natural resources

P: production

C: consumer good

U: utility

W: waste

r: Recycling

ER: exhaustible resources

RR: Renewable Resources

h: harvest rate

y: yield of the resource

A: assimilative capacity

"The problem we face is that the design of economies - whether free market, planned, or mixed —offers us no guarantee that the life support functions of natural environments will persist. Modern economics spends quite a lot of time trying to determine whether equilibria *within the economic* system exist - for example, whether we can have equilibria between supply and demand in money markets, goods markets, and labour markets and whether there is some set of market-clearing prices which will secure all these equilibria..

But we seem to have no comparable analysis that demonstrates whether any particular economy is consistent with the natural environments which are necessarily linked to that economy. They are consistent in one sense - economies exist and natural environments exist. What we do not know is what needs to occur for them to *co-exist in equilibrium. We do not have an existence theorem that* relates the scale and configuration of an economy to the set of environment-economy interrelationships underlying that economy. Because we have no such theorem, our planning of the workings of economic systems - and 'planning' here includes letting the economy operate with free markets - risks the running down, the depreciation of the natural environment's functions. Economies may survive, and may survive for long periods of time in such states of disequilibrium.
But if we are interested in *sustaining an economy, it becomes* important to establish some conditions for the compatibility of economies and their environments.. "

(4) Grossmann's Reproduction Scheme and his breakdown theory of capitalism

c: constant capital. Annual growth rate =10%
v: variable capital. Annual growth rate = 5%
k: capitalist consumption
a_c : addition to constant capital of the next year from this year's surplus
a_v : addition to variable capital of the next year from this year's surplus
This year's surplus value = k+ a_c + a_v

		c		v		k		a_c		a_v		annual value of total products	percent of capitalist consumption in relation to surplus value(k)(%)	percent of accumulation in relation to surplus value a_c+a_v(%)	profit rate $\frac{k+a_c+a_v}{c+v}$
year 1	I	120000	+	50000	+	37500	+	10000	+	2500	=	220000	75.00%	25.00%	
	II	80000	+	50000	+	37500	+	10000	+	2500	=	180000	75.00%	25.00%	
		200000	+	100000	+	75000	+	20000	+	5000	=	400000	75.00%	25.00%	33.3%
year 2	I	134667	+	53667	+	39739	+	11244	+	2683	=	242000	74.05%	25.95%	
	II	85333	+	51333	+	38011	+	10756	+	2567	=	188000	74.05%	25.95%	
		220000	+	105000	+	77750	+	22000	+	5250	=	430000	74.05%	25.95%	32.3%
year 3	I	151048	+	57576	+	42059	+	12638	+	2879	=	266200	73.05%	26.95%	
	II	90952	+	52674	+	38478	+	11562	+	2634	=	196300	73.05%	26.95%	
		242000	+	110250	+	80538	+	24200	+	5513	=	462500	73.05%	26.95%	31.3%
year 4	I	169336	+	61742	+	44457	+	14198	+	3087	=	292820	72.00%	28.00%	
	II	96864	+	54021	+	38897	+	12422	+	2701	=	204905	72.00%	28.00%	
		266200	+	115763	+	83354	+	26620	+	5788	=	497725	72.00%	28.00%	30.31%
year 5	I	189744	+	66179	+	46927	+	15943	+	3309	=	322102	70.91%	29.09%	
	II	103076	+	55372	+	39264	+	13339	+	2769	=	213819	70.91%	29.09%	
		292820	+	121551	+	86191	+	29282	+	6078	=	535921	70.91%	29.09%	29.3%

Basic suppostion of the breakdown theory

1. It is a basic property of the capitalist system that expanded reproduction takes place in this trend. As a result, at some point in time (year 36 in the example above), the surplus value produced is insufficient, and even if capitalist consumption reaches zero, it collapses to a level where expanded reproduction cannot continue. It's a law.
2. The ever-increasing organic composition of capital is the root cause of the lack of surplus value. In other words, under the assumption for simplification that value and price are the same, the proportion of physical factors of production increases.
3. In order to prevent this, the capitalist system uses various means to fill the lack of surplus value whenever an economic crisis occurs. A typical example is the introduction of cheap raw materials through international trade and direct capital export.
4. It gives many implications for the direction of evolution of the current production system in that it explains that the relative absolute continuous growth of physical means of production and material input compared to human resources is the driving force behind economic crises and collapse.

Examination of the Breakdown theory

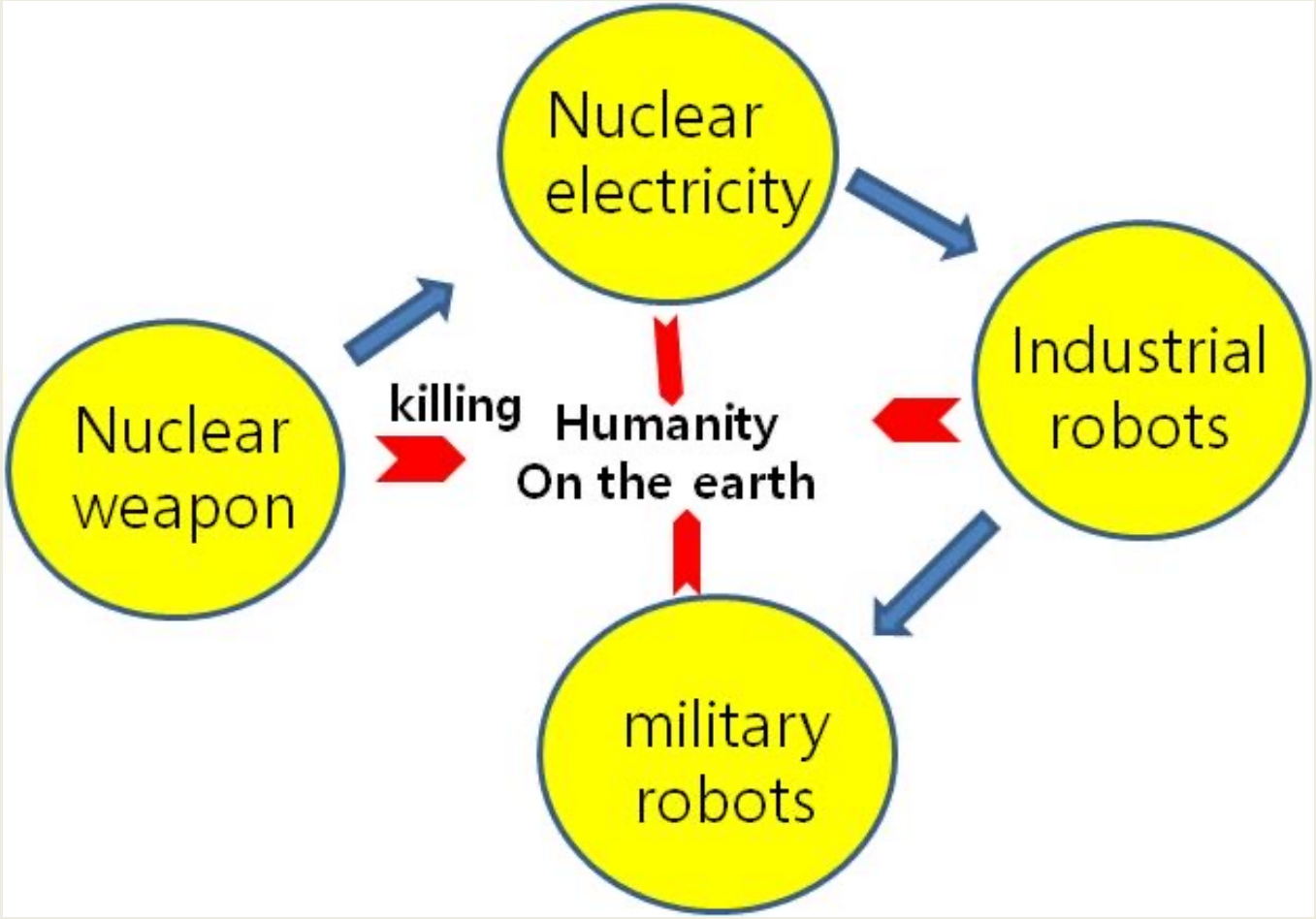
1. In Marx's economic theory, the steady going-up of the organic composition of capital in capitalist society is premised as a fact. Among the capital invested in production, the ratio of the amount invested in material factors such as means of production and raw materials compared to the amount invested in labor costs continues to rise as technology develops.
2. This can be explained in two ways. First, it is the upheaval of the composition in terms of the real thing . Assuming that the same number of workers work at the production site, these workers work surrounded by more materials. Second, when technological innovation occurs in the field of daily necessities such as food necessary for workers' lives and these consumer goods become cheaper, workers' wages decrease, and the organic composition of capital goes up. On the other hand, if the scarcity of goods corresponding to means of production or raw materials increases and more efforts are made to procure them, the organic composition of capital increases. Then the production and sale of products make and realize surplus value that is mainly put into replenishing the material elements of production, and in accordance with technological innovation, more and more surpluses are used to develop new material means of production and put them into production. This is called the accumulative process.
3. If such a trend continues, in the end, the capital needed to hire the manpower necessary for production will not be replenished, resulting in an increase in the number of unemployed, and the surplus needed for the livelihood of capitalists will disappear, leading to the conclusion that the capitalist economy will inevitably collapse.

4. Therefore, slowing the rise of the organic composition of capital, procurement of cheap raw materials from abroad, cheap labor, and cheap consumer goods such as food that can lower wages may contribute to delaying the crisis of this collapse. Capital exports to developing countries with relatively high profit rates also contribute to this. Of course, an increase in the rate of surplus value, which is the size of profit relative to the input labor wage, also makes it possible to avoid such a collapse crisis. But solutions to these crises can only serve to delay the onset of crisis and collapse.
5. Grossman's theory of collapse of capitalism presupposes that surplus value can be created only from labor among various factors of production, that there are technological and social limits to the rate of surplus value, which is the size of profit relative to total wages, the organic composition of capital, given by the state of technological development, has a tendency of progressively higher rise, and that the growth of the working population has a lower limit.
6. assuming that factors of production such as land, human, and material capital are maintained and reproduced without problems through variable and constant capital, the problem of quantitative and qualitative degradation of human resources for excessive profit creation and the problem of depletion of nature and land can be analyzed only limitedly.
7. Though the theory claims that cheap labor in resource- exporting countries compensates for the lack of surplus value for capital accumulation in industrialized countries through unequal exchange of fossil fuels, other mineral resources , and timber with industrial products, the environmental destruction of resources exporting countries has not been sufficiently dealt with by that theory .

(5) Extreme form of industrial technology and its danger

1. In the production of nuclear energy system that began in the 1950s , life cycle of uranium ore extraction , crushing and processing , nuclear power plant site securing , construction , operation , nuclear waste storage and disposal, etc. provokes problems of human health damage caused by radiation exposure of workers and nearby residents and its continuation through DNA distortion into future generations, but no existing economic system has the means to properly analyze and control them.
2. Smart factories driven by artificial intelligence plus nuclear electricity represent the utopian dream of extremely high organic composition of capital, but may have the potential of enormous accumulation of sacrifices of human lives and the nature.
3. it remains an area where natural restoration for the results of destruction through time, or restoration by artificial environmental technology cannot work .
4. climate change or other environmental issues are issues of speed control and balance, the issue of nuclear technology currently belongs to the issue of fundamental infringement on rights and morality itself .
5. Nuclear weapons and nuclear power generation, production by robots, war by robots destroy the justice and ethical system of war and peace, and irreversibly destroy and reduce the life supporting system on the earth, which became a direct trigger for skepticism and a sense of crisis about industrial civilization.

Veiled structure of killing and consuming humans by the rise of organic composition of capital, pretentiously economizing human labor



Potential conclusion of industrial civilization

3. Solution : The concept of circulation

(1) The unity of man and earth

1. Humans survive by using the natural environment as a life support system that supplies air , water , and nutrients .
2. Human health and vitality have a relationship with the health and vitality of the natural environment .
3. Destruction of the natural environment is a direct cause of hindering human health maintenance and reproduction .
4. In economics, treating ' labor ' as an independent production factor is problematic if attention is paid to the quantity and quality of the population .
5. Variable capital needs to be seen as a value that must be paid to maintain the unity of the labor force and the natural environment .
6. No matter how much wages are paid to workers, if they severely destroy the natural environment in which they live and do not spend the cost of restoring it , this should be seen as not investing variable capital at the level of reproducing labor power .
7. In order to maximize surplus value, variable capital is lowered below the level at which labor power is reproduced, thereby degrading labor power and gradually making it difficult to reproduce labor power. and the deterioration of the environment. Examples can be found in Korea's rapid urbanization, expansion of large metropolitan areas, devastation of rural areas and environmental deterioration.

(2) philosophy: Confucianism in East Asia Zhang Zai, Western Inscription

Heaven is my Father
and Earth is my Mother,
and even such small creatures as we
find intimate shelter in their embrace.

Therefore that which fills the universe
I regard as my own body,

and that which directs the universe
I consider as my own nature.

All people are my brothers and sisters,
and all things are my companions.
....
Wealth, honor, blessing and benefits
are meant for the enrichment of my life;
while poverty, humble status, worries and sorrows
are meant to help me find fulfillment.

In life I follow and serve Heaven and Earth;
In death I will be at peace.

(3) philosophy: Tukano people- natives in a region, Brazil

A fundamental tenet of Tukano cultural instruction is that human beings should never disturb the equilibrium of the finite flow system, but should return whatever energy they remove from the system as soon as possible. For example, when an animal is killed or when a crop is harvested the energy of the local fauna and flora is thought to be diminished; however, as soon as the game or fruit are eaten by humans, the energy is conserved, because the consumers of the food thus acquire the reproductive life force that previously belonged to the animal or plant.

"This cosmological model of a system which constantly requires rebalancing in the form of inputs of energy retrieved by individual effort, constitutes a religious proposition which is ultimately connected with the social and economic organization of the group. In this way, the general balance of energy flow becomes a religious objective in which native ecological concepts play a dominant organizational role. To understand the structure and functioning of the ecosystem becomes therefore a vital task to the Tukano. It follows that the Indian's ethnobiological knowledge of the Natural environment is not casual and is not something he assimilates through gradually increasing familiarity and repeated sense experience; it is a structured, disciplined knowledge which is based upon a long tradition of enquiry and which is acquired of necessity as part of his intellectual equipment for biological and cultural survival."

Source: William Koethke, The Final Empire pp. 409-410

(4) Medium of Unity : Earth and Water, hindered by nuclear power plants

1. **Soil** is a place where the elements necessary for the vital activity of plants are created by the activities of microorganisms, and water is purified and stored .
2. It determines the quality of human food, is formed for a long time , and is a direct explanatory factor for the rise and fall of civilization .
3. While **water** naturally circulates by solar energy, it becomes a medium that moves and circulates materials by the terrain and gravity . Together with wind, it has the ability to replace power by fossil fuels .
4. In a watershed, materials are mainly exchanged and circulation occurs .
5. Beyond resources that humans use almost free of charge, they actually play a much more active role in circulating materials .
6. In the case of **nuclear energy production**, it permanently destroys and reduces human life support space through contamination of soil and water bodies . -> Humans have to migrate to other areas and cyclical unity is destroyed . (The presence of multiple nuclear power plants in the Yeongnam region, South Korea, although not located in the upper reaches , negatively affects the entire Nakdong River water system through groundwater and air flow .)

(5) Watershed(basin) centered View of Economy and Culture

1. Human beings and nature form one body in watersheds , sea areas , and islands .
2. The level of expenditure for the use of labor as a factor of production, etc., must also be determined on a per-watershed basis, taking into account unity with natural conditions .
3. In South Korea, The water resource map is drawn with 21 large region areas centered on the watershed , 117 mid- region zones and 840 standard zones , which can be regarded as zones of a naturally formed circular economy .
4. If you look at the topographical map of the Korean Peninsula, you can know the living and cultural sphere of the people . Mountain ranges become the boundaries of living and cultural areas .
5. It is necessary to **promote** economic activities suitable for the climate by utilizing natural forces through surveys and research on geography, history and culture at the basin level .
6. to **foster** national and public universities as regionally specialized educational institutions , implement regional history - culture - geography - ecology - economy integration education, and nurture local talents .
7. to **plan and implement** policies for dispersing population in overcrowded areas according to ecological capacity, through various incentives and tax systems,
8. and production, consumption and distribution policies in the direction of increasing the diversity of watersheds .

(6) circular energy , transportation - logistics , waste policy

1. It is good to have an energy supply system and operating company with an independent pricing system on a per-watershed basis .
2. Develop renewable energy sources suitable for the watershed as much as possible .
3. (Sailboat sailing, etc.) Develop cargo logistics policies that make the most of the power of water and wind .
4. By organically linking water transportation, land transportation , bicycles, etc., a public transportation system that does not depend on private cars within the watershed is desirable.
5. a substance - energy circulation system of waste and organic by-products in which cities and rural areas within the watershed are connected , and do not outsource the treatment of waste .
6. A watershed forms a cyclical economic community, and nuclear energy production facilities that hinder the healthy material circulation of the watershed must be banished . Instead, it should also refrain from importing power produced in a lethal manner from other watersheds . To this end, efforts must be made to achieve energy self-sufficiency at the watershed level .

4. Conditions and reaching point for the transformation into a circular society

1. Starting from the awareness of the cyclical organic relationship between human resources and the natural environment, inspired by our native cultures, we develop economics and economic concepts that understand human labor as connected to nature .

2. The active role of human labor and nature's ecological services, which form a circulatory system, will be revived , and the destruction of nature due to the indiscriminate use of artificial power devices will be strictly regulated .

3. Energy Supply technology that permanently destroys or reduces the circulatory system should be boldly banished .

4. Centered on geographical watersheds that can form circular economy units , the political and administrative self-government system is strengthened, and the centralized national administrative system is converted into a federal regional federation system . The military service system will be reorganized so that each region has its own talent development and public interest activities with conscripted young people, and a career soldier system will be implemented at the national level .

5. Nuclear energy and nuclear weapons are only possible in a regionally discriminating, centralized State system. Converting them into a structure that can recognize them as unnecessary and harmful is the goal that the transition to a circular society aims to achieve .

6. We often provide forums for exchange of wisdom and experiences from circulation societies in Latin America and Asia .