A Humanistic Approach to the Problems of Waste Disposal at Baku - Tbilisi - Ceyhan Pipeline Construction

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Abstract

We are trying to take into consideration humanistic problems including economics, environmental and social conditions. In the process of pipeline construction a lot of problems may arise and the most essential one is waste disposal such as pipe-cuts, tyres, shavings, plastic bottles, metal drums, food waste and etc. As it is commonly known the simplest way of disposal is burring or burning of waste. For above motioned project we are going to propose more complicate, but more environmental friendly, reasonable and profitable methods, which is re-use and recycling of waste products. Such an approach would allow us to solve economic and social problems of the local population, create additional workforce, and develop medium and small production during the whole project. There are lots of legal acts and regulations concerning waste disposal, however, it seems impossible to envisage all details and specific features arising in the process of construction of this or that particular region, specific mentality, national and traditional customs of the population and physical natural resources and so on. The suggested model, being far from universal seems to enwrap the problem, leaving intact specific localities on the Georgian territory.

1. General

The implementation of the Baku-Tbilisi-Ceyhan (BTC) main oil pipeline project is a very important event for such a relatively small and developing country like Georgia. There are lots of political goals, interest of multinational corporations such as

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BP, present-day (new working places, involvement of Georgian companies in the project) and in the future (big investments, independent gas supply) economic advantages, but, as it usually happens, fallout of the big industrial project presents environmental problems to be solved.

When construction is carried out by the multinational company with high reputation such as British Petroleum, it seems that there should not be any unexpected happenings, but during any construction many questions might be raised and it is difficult to evaluate all of them. We would like to review two of them –

1. The impact of the construction on the local community.
2. Waste management of the project.

The proposed conceptual model is intended for solving the balance between three main components: economy, environment and social conditions in the regions of construction.

In the paper [K. Kvinikhidze, 1998] we defined a humanistic system as a systems, which behaves under the strong influence of the knowledge, feelings and emotions of the person. It is shown that economic systems, which include complex probabilistic dynamic systems, are typical humanistic systems. For the description of the humanistic system behavior are used signs, word and sentences of the natural and artificial languages.

2. Problems of the local community

Quite often the pipeline route passes close to populated areas or through agricultural plots. In the paper we are presenting the several parts of the social and environmental problems facing on the pipeline construction. Each of these tasks is very difficult and requires exact humanistic methods and approaches for their solving.

The tasks are:

1. To minimize impacts and disturbance of the environment along the entire pipeline route.
2. To achieve agreement with the local communities affected by the pipeline construction.
3. To avoid the mental and social problems of the landowners.

As to the first task – there are lots of different opportunities and experience of actions and procedures to minimize the impact of the pipeline construction on the environment. Applying the actions and procedures such as monitoring, regular preventive action, mitigation measures and others, it is possible to reach environmental resilience (Holling C.S., 1973). Environmental resilience means that the environmental system of the region can absorb changes of the systems parameters and move from one sustainable state to another.
The Second task evolves when route of pipeline gets through populated areas and has to pay compensation on indemnifying losses, in accordance with reduction land plots or granting peasants new plots of land. In this case there must be organized a very complex, in his possession implying individual approach in each separate case practically. The Deal complicated and procedure is made more circumstance that there be overcome psychological inertia of the peasant, connected with unwillingness to leave the old land which is explained and under the insufficiency of the fertile lands in mountain regions.

While solving this task, possible, may come in a handy approach, considered by us in functioning (Kvinikhidze K.S., Enukidze R.N., 2000a), where are given features land area and methods are described of the choice corresponding to way of best their mastering.

This task can have an other decision - a possible money compensation owner lands that also is a hard task.

And finally, the third task - an psycho-social, implying overcoming inertias of the owner of land, their social reorientation. Local population may work at the site. In the process construction pipeline many inhabitants of the neighboring region may be attracted to performing the functioning, however after completion construction part of them remain on pipeline for constant functioning, taking part in monitoring, guard pipeline etc., that will bring about change their social status, and accordingly and lifestyle. The Tasks of the similar sort are considered by us in papers [K.Kvinihidze, R.Enukidze, 2000a; 200-b and 2002].

3. Waste construction and their classification

The quantitative and the qualitative data on the generation, use, disposal and environmental effect of waste and unreliable in many countries Eastern Europe, Caucasus and Central Asia and do not meet priority demands. Some important waste streams such as: hazardous waste; municipal waste; hacking waste; end of life vehicles (used tires); healthcare waste; construction and demolition waste; waste from electrical and electronic equipment (incl. butters and accumulators); sewage sludge; and waste oil; are not properly monitored. Inventories are lacking in several countries of waste of high potential hazard, which were (or country to be) dumped on landfill sites, especially in rural areas. Different agencies involved rarely share data. Data quality is often uncertain; data collected in often incomplete; little work has been done to analyze or synthesize data for policy development and assessment through appropriate indicators.

The Waste got at construction of the oil pipeline form, basically, from two sources- waste production or strictly construction and home waste, formed as a result of vital worker’s activity in process of construction.

All these wastes may be divided into three main groups. These wastes are:
1. suitable for recycling repeated use;
2. intended for the following conversion;
3. for utilization salvaging.

The Waste of the first group in consultation with organ of the local home rule can be taken out of in place of the residence of the local population. For instance, scrap tree, in woodless regions particularly, and can be used by local population as fuel; food waste (the kitchen wastes) can be used as fodder on pig-breeding farms etc. The materials when properly collected and sorted in, intended for the following conversion can be marketed by local population. The most interesting, in our view, represents such waste as scrap of the pipes, felling trees, base metal. The organization of the collection in this particular waste is important for local population, as the purpose of the collection and sorting out can serve as the material for a secondary production.

Subjecting to salvaging third group the waste must be carried out in corresponding place of burial or incinerated.

4. Waste use

As far as we know, construction administration does not levy the pay for waste referring to the first group, and it can be used by local population for their own necessities free.

However some food waste, plastic tare etc. can be not used as secondary staff and their destruction must be organized, it is clear to not to create the deposit of the rubbish and waste, which can be a source of insanitary or be a source of spreading gastric diseases, revenge of the concourse of the rats, flies and other peddler of the diseases.

For deleting useful waste existing infrastructure must be used, but in the absence of such she must be created. Pipeline construction project must be realized in accordance with the top European standard and on the principles of BATNEC.

The Most interest for the development of small business in construction area represents the waste, which can be processed. The waste beside by building company gained will allow to organize all through construction small and average enterprises on remake wood, forestalling of the scrap metal: coloured metals and ferrous metals, and in some cases may promote creation of an enterprise, producing different goods (furniture, home utensil etc.).
5. Models of humanistic approach

We shall consider several models, which can be used by local population, on areas or near to the of living where passes the oil pipeline. It is possible to select two groups of the models - a long-term and short-term.

The first group of the models include: a) transmigration of the local population to a new place, acquiring new lands plots; and b) change the social status - a transition from peasant’s lifestyle to industrial, connected with production, construction or beginning of the own business.

The first one of these question described in details in the papers [K.Kvinikhidze, 1998; K.Kvinikhidze, R.Enukidze, 2000a]. The question considered, when the purpose of the owner of the land (the plot of land) is a stable and it is high enough income after solid expenseses have been made. The damage, to the environment in region as a whole, must be minimum. The optimum realization for given concrete event of the choice promotes presence of the databank, in which there is information on 15 parameters: geographies, geologies, climate, hydrology and etc. In each concrete event profit from rational using of the area (the piot of land) can be determined as follows:

\[ P_j = -C + S_{av} - E = S_{av} - (C+E) \geq S_{av} - (C_0 + E_0) = P_0. \]

i.e. \( P_j \geq P_0 \), where \( P_0 \) - a purposes of the area (nadela).minimum admit profit; \( j = 1,2,3,... \) - one of the purposes of the area.

Boundary terms \( S_{av}, C_0 \) and \( E_0 \) are assigned beforehand:

\( S_{av} = \sum_{i=1}^{n} S_i \), -average profit for n years. Some of \( S_i \) vay be \( \leq 0 \! \)

\( E_0 \) - a maximum possible level of the contamination for given region.

Usually \( E \) does not yield to proper pricing, however it is necessary to enclose the maximum an effort for its minimization.

The second question - a change of the status of the local population, depends on their desires, however in this case a possibility must be provided \( D_k \geq D_0 \). In this case \( D_0 \) - an average income, before begin construction pipeline, but \( D_k \) - a following income. \( k = 1,2,3,...,m \), -one of the new professions: road worker, guard, welder etc.

The short-term models of the humanistic economy pertain to time, during which pipeline construction passes in given region, and are bound with construction directly and waste from in its process.

In this instance difficulty to situations consists in that with the completion of the construction in given region the sources of waste and income coming of powerfully grow shorter or in general stop.

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In the first of considered events - a reception by population to compensations in the manner of new land plots, possible enough clear visualize future activity of the local inhabitants.

As to the local population, getting a certain advantage in the form of compensation for inflicted damage - split them of the road by heavy technology, constant noise of working mechanisms, dirt coming of manufacturing earthworks and etc.then to this people on the part of organizer construction must be shown attention. It is necessary to restore destroyed roads and other communications; organize the rehabilitation works to recover ecological situation; constantly pay attention to improvement of the social conditions local population.

6. Conclusions

The questions Considered by us of the humanistic approach to problem of the local population and problem of salvaging and using waste construction considered by oil pipeline BTC graphically show that at observance of all main requirements presented to the process of construction and creation it well-disposed relations with local population, the mutual advantage is enough. Can be economic and social development of there infrastructure of the local population, increasing economic level of their life style, might be realized the ecological education and learning of the local population, particularly theyoung generation.

Bibliography


