

**ENVIRONMENTAL SCARCITY AND SECURITY
IN FORMER-SOVIET CENTRAL ASIA**

*Dissertation submitted to the Jawaharlal Nehru University
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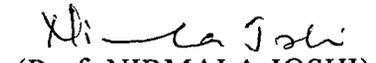
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CERTIFICATE

Certified that the dissertation entitled "**Environmental Scarcity And Security In Former-Soviet Central Asia**" submitted by **Om Prakash Malik** in partial fulfilment of the requirements for the award of the Degree of **Master of Philosophy** of this University, is his bonafide work and may be placed before the examiners for evaluation. This dissertation has not been submitted for the award of any degree of this University or of any other University to the best of my knowledge.


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CHAPTER I

INTRODUCTION

The resources have been studied in the ambit of environment and conflict. Homer - Dixon (1994)¹ has pointed out that 'environmental scarcity' causes conflicts. He explains environmental scarcity as renewable resource scarcity with the help of three main sources : environmental change, population growth and unequal distribution of resources. There exists a lot of contradiction in defining environmental scarcity and sources of environmental scarcity. Libiszewski raises question in favour of general tendency among the scholars to highlight the scarcity of non-renewable resources and its linkages with conflicts. Auther H. Westing (1989)² includes both: renewable and non-renewable resources in the ambit of conflicts. While, Narottam Gaan (1995)³ has precisely pointed out ^{that} natural resources are so interrelated that any disturbance in non renewable resource leads to environmental degradation and disturbs renewable resources. This pattern includes both: renewable as well non-

¹ Homer Dixon F., "Enviornmental Change and Violent Conflicts : Evidences from Cases", International Security, Vol.19(2), 1994, pp.5-40.

² Aurther H. Westing, "The Environmental Concept of Comprehensive Security", Bulletin of Peace Proposals, 20(2), 1989, pp. 129-34.

³ Narottam, Gaan, "Environment and Conflict: The South's Perspective", Strategic Analysis, Sept. 1995, pp. 327-41.

renewable resource scarcity in the format of environmental scarcity. Considering the potentiality of renewable resources of setting up a process of reversibility in the case of little or limited disturbance and a process of irreversibility whenever human disturbances exceed beyond resilience of nature, the focus is laid on renewable resource scarcity. Due consideration also has been given to non-renewable resource scarcity where it, directly or indirectly, disturbs renewable resources – for instance, exhaustion of coal may result into launching over forests; and exhaustion of iron ore in one region can cause shifting of iron industries to other areas. It may disturb the ecological setting of that area. Besides above mentioned three sources of environmental scarcity, poverty and consumption pattern also play significant role, because population growth becomes much more significant when it is accompanied by high pattern of consumption. As, Ac P. Bifani⁴ (1993) has highlighted an estimated figure that an average American consumes at least 1500 kgs of agricultural product and energy equivalent to 55 barrels of oil, whereas a Bangladeshi consumes 600 kg of agricultural product and energy equivalent to 6 barrels of oil, per year. Thus it exerts great pressure on resources or causes a resource

⁴ Ac P. Bifani, RURAL DEVELOPMENT AND ENVIRONMENT in A.S. Bhalla, "Environment and Development :A WEP Study", International Labour Office, Geneva (1992).

scarcity. Realisation of the relationship between poverty and the environment has taken place. Poverty, solely in term of deprivation seems inadequate for understanding of its impacts on the environment. But, when it appears with marginalisation of people to the ecologically fragile areas then it causes environmental degradation. As, the World Commission on Environment and Development (WCED, 1987) has recognised “poverty as major cause and effect on global environment problem.”

From the ancient time, the environment and its impacts have been the concern of scholars. It is reflected in various philosophical perspectives that typify dynamics of nature and its relationship to man and in society: environmental determinism, possibilism, stop and go determinism, etc.

This work deals with environment in ecological perspective and its influences on human behaviour. In this framework, a totality of relationship among various organisms and their physical environment has been considered. Man is very sensitive organism whose perceptions develop in the immediate surroundings which, directly or indirectly, impinge upon human's behaviour (the “operational environment”). In this way, a man possesses affective attitudes and affective responses. “Operational environment” is a subset of the

general environment which impinges upon human behaviour, directly or indirectly. An environment is a system in a state of flux in which it shares energy and material through food chains and bio-geo-chemical cycles. Here, the operational environment includes not only physical environment but also perceptual, cognitive, ideological, philosophical, sociological and other environments in the space where man lives. It comprises of a complex web of variables such as natural resources and human's edifices (culture) which influence each other. In the same way, any change in the operational environment leads to change in affective attitudes and affective responses.

The sources of environmental scarcity reduce quality and quantity of resources on one hand, and cause a decline in per head share of resources, on the second hand, when they interact with poverty and unequal distribution of resources lead to economic deprivation of the poor by the rich. The concentration of resources in the hand of the rich is known as 'resource capture'.

Migration of people to the ecologically fragile areas (hilly regions, forest, and to semi-arid area and pastoral lands and in shanty town), results in 'economic marginalisation'. It further leads to environmental degradation because the ecologically fragile areas have low "carrying capacity". Indeed, the process of resource capture and

economic marginalisation indicate a state of disruption of socio-economic institutions. It, further, results into perpetual poverty which reflects in changes in affective attitudes and affective responses of the people that determine the decision making activities. It goes against the established set-up of society and the legitimised eco-political institutions. It shrinks the radius of trust, disrupts familial culture and distorts moral values which trigger of conflicts. If a state of under endowed socio-economic and political institutions⁵ exists in the company of 'resource capture' and 'economic marginalisation', it will lead to civil strife, insurgency and violent conflicts.

This dissertation deals with a comprehensive viewpoint of security which includes not only military power projection capabilities but also economic, social and environmental components. This view point of security has, mainly, emerged out after the first UN Conference on Human Environment held in Stockholm in 1972. Officially, environment as major component of security was included

⁵ Under endowed socio-economic and political institutions means ethnic division of social structure, prevalence of clan hostility and social cleavages such as caste and class; under developed economic infrastructure; high inflation rate; prevasiveness of unemployment; lack of diversification of production process; lack of backward and forward linkage in process of production; and a power structure based on a clan, a region and a group; lack of democratisation of institutions; mal-functioning of legalised set up (such as constitution or parliament) and criminalisation of power structure.

in 42nd session of the UNGA (1987). After that, a plethora of literature has been published incorporating various components: economic, social and environmental components in the framework of security. As Aurther H. Westing (1989)⁶ has used a term “comprehensive security” which includes military, social, ideological and environmental components.

In this dissertation, the researcher has made an attempt to analyse causal relationship between a state of environmental scarcity and security in the *former-Soviet Central Asian republics*^{*} : Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan and Kazakhstan. This area falls into arid to semi-arid region with mountaineous characteristics. This region suffers from many adverse consequences of the Soviet regime’s legacy. During the Soviet period, diversification of the production function was distorted by monocropping pattern of cotton and specialisation in exporting of raw material. It turned Central Asia in to net importer of processed food articles and textiles. The excessive diversion of the water resource for agricultural purposes has caused desiccation of the Aral Basin. It has resulted in deposition of a large amount of salt over the exposed area of 27000 km² of dry sea bed from where prevailing winds carry salt and dust hundreds of

⁶ Aurther H. Westing, “Environmental Scarcity and Comprehensive Security”, Bulletin of Peace Proposal, Vol.20(2), pp.129-34, 1989.

^{*} Here, Central Asia, Central Asian Republics and Central Asian States have been used, interchangeably.

kilometers. On one hand it influences weather patterns thousands of kilometers away, and on the second hand, "it has endangered the life of million of people and infant mortality has reached 10 percent around the Aral Basins".⁷ Moreover, the excessive application of chemical and fertilisers has distorted bio-chemical cycles and chemical composition of soil. Filtering down of these chemicals in the ground and the return flow to the water bodies has severely contaminated water sources from where a large section of the population drinks water. It has resulted in wide spread epidemics (P.M. Carley, 1989).⁸

On the demographic front the situation seem unpleasing for instance, the population density per square km of arable land in the five republics: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan is 42, 843, 716, 278 and 322 respectively.⁹ The situation becomes very grim when a considerable portion of the arable land has been eroded by the action of wind and water. High population growth rate and a mass exodus of population from Central Asia indicate under endowedness of socio-economic institutions. As Central Asian society

⁷ Central Asian Post, Feb. 6, 1997.

⁸ P.M. Carley, "The Price Plan :", Central Asian Survey, Vol.8(4), 1989.

⁹ Yuriy Kulchik (ed.), Central Asia After the Empire, (London: Pluto Press, 1996).

is a multiethnic society in which the clan has been playing important role in power structure since many decades. It has reflected into clan hostility¹⁰ that hampers on going process of democratisation. Moreover the ethnicity and clan embedded power structure¹¹ seems to be a destabilising factor in Central Asia.

In case of economic affairs, Central Asian republics are passing through a transitional phase, from an administrative command system to a market oriented economy. At present, these republics' economy is wrapped in mal-functioning of monetary market, mismanagement of commercial sector and destabilisation of production function.¹² It reflects into negative growth rate, roaring inflation rate and growing unemployment.¹³ Ben Fowkes (1997)¹⁴ has depicted that the

¹⁰ Fowkes, Ben, "The Disintegration of the Soviet Union : A Study in the Rise and Triumph of Nationalism", (London : MacMillan Press Ltd., 1997), pp.20-179.

¹¹ Morth de Melo (ed.), "A Comparative Analysis of Twenty Eight Transition Economics in Europe and Asia", Post Soviet Geography and Economics, No.5, 1996, pp.265-285.

¹² Shirin Akiner, "Conflicts Stability and Development in Central Asia", in Luc Van de Goor, "Between Development and Destruction", (London : MacMillan Press Ltd., 1996), pp.257-97.

¹³ The Current Digest of the Post Soviet Press, Vol.XLVIII (20), 1996, p.20.

¹⁴ Fowkes, Ben, "The Disintegration of the Soviet Union : A Study in the Rise and Triumph of Nationalism", (London : MacMillan Press Ltd., 1997), pp.20-179.

speculation is quite prevalent and pervasive evasion of punitive tax is frequent.

In the political sphere of Central Asia, the picture of process of democratisation of institutions is hazy and shows a transitional phase. Any kind of demonstration is either prohibited or restricted to a large extent. Most of the republics' Presidents are working with help of decrees.¹⁵ Though the Presidents of the republics are elected, yet, a lot of questions are raised on their elections. The state controls all machinery of mass media and communication that is subjected to the party in power. Moreover, a politics of personality cult is on the agenda.

Since, the late 1980s, Central Asia has experienced so many conflicts such as the Osh valley conflicts, the Ferghana valley's conflicts, conflicts of Askhabad and Nebit-Dag in Turkmenistan, the Tajikistan's civil war, etc. Except the Tajikistan civil war, in all other conflicts inter-ethnic animosity provided a pretext.¹⁶ But, in reality, environmental scarcity has contributed to the conflicts. As in the case

¹⁵ The Current Digest of the Post Soviet Press, Vol.XLVIII (2), 1996, p.26.

¹⁶ Yaacov Ro, i., "Central Asian Riots and Disturbances, 1989-90 : Cause and Context", Central Asian Survey, Vol.10(3), 1991, pp.21-54, expresses, in case of Askhabad and Nebit Dag's conflicts, that inter-ethnic animosities provided a partext but in reality the conflicts are attributed to socio-economic cause.

of the Osh Valley conflicts, the Kyrgyz started occupying a farm because pressure on the land was exerted by immigrating Kyrgyz from the mountaineous region, and by natural growth rate. Of course, this migration was result of lopesided development which offered better factors of attraction to the valley. So, population was increasing on the limited resources of the region. It was an attempt for resource capture by both the groups : Uzbeks and Kyrgyz, as they competed for the control of scarce resources. The Uzbeks considered that the Kyrgyz were chewing out their share, and vice-versa. The eco-political institutions proved incapable to solve the problem.

In the case of the Ferghana Valley conflicts, environmental scarcity played a significant role. On the one hand, high growth rate of population and a high degree of compaction of population in the river valleys (most of population lives in 16% of the total area) reduced the pie per head; on the second hand, a declining living standard of rural population acted as pushing factor. Thus, population pressure was increasing in the valley and mismanagement of water and land resources along with a deteriorated state of environment was releasing sanitation problem and reducing the productivity of the hinterland. Thus, in this region, the living standard of the Uzbeks (a majority) was on decline while the Meshketian Turks (the aliens) were in better

conditions. As Timur Pulatov¹⁷ (Uzbek writer and Publist) highlights that “the atmosphere was fanned by the stories of the Mushketians getting the best post”. It was also a case of economic deprivation.

In the case of Tajikistan’s civil war, mainly, two groups of elites are fighting for power. Prevalent unemployment, dying of the people due to epidemics of diseases and hunger¹⁸ and increasing inequality provides enough space for disrespect to the existing set up. Moreover a clan dominated power structure¹⁹ is enough to instigate the people by the opposition. And ‘the porous Tajikistan border and a state of insurgency across the border²⁰ suits to make weaponry available. The under-endowed socio-political institutions provide a backbone to continue the civil war.

Objectives

This study focuses on the following objectives :

- A systematic analysis of sources or causes of environmental scarcity.

¹⁷ In Yaacov Ro, i, (1991)

¹⁸ The Current Digest of the Post Soviet Press, Vol.XLII, No.20, 1990, pp.1–4.

¹⁹ The Current Digest of the Post Soviet Press, Vol.XLVIII (20), 1996, p.20.

²⁰ The Current Digest of the Post Soviet Press, Vol.XLVIII (5), 1996, pp.15–16.

- To find out whether environmental scarcity leads to social disruption, civil strife and violent conflicts.
- To study the nature of interrelationship between environmental scarcity and security in the Central Asian states.

Methodology

The study will be mainly based on published literature and different reports and facts issued by different organisations. In this study, the researcher will attempt to do an objective analysis of the material available on the subject. An attempt will be made to establish whether the causal relationship exists between environmental scarcity and security in Central Asia. It considers all spatio-temporal dimensions, systematically.

CHAPTER II

THEORETICAL OVERVIEW OF ENVIRONMENT, ENVIRONMENTAL SCARCITY AND SECURITY

Environment, generally speaking, encompasses biotic and ^abiotic elements, the former elements are the atmosphere, the hydrosphere and the lithosphere; and the later elements are all living organisms which interact with one another and with biotic elements.

Till now, many environmental thoughts have appeared, analyzing relationship that typifies dynamics of nature and its relationship to man and his society. In the history of evolution of these thoughts, many changes have taken place from teleological elements to high scientific rigor including computer assisted systematic analysis. Here is an attempt to deal with environment in ecological perspective and its influence on behavioural human spatial setting. Ecological perspective "permits a broader definition of environment including the whole spectrum of organic life (plants, animals and microscope) as well as type of physical resources relevant to the existence of living organisms".¹

¹ Reginald G. Gollidge, Analytical Behavioural Geography, (London : Croomhelm, 1987).

In this very complex entity, human being is an organism with very sensitive senses who can receive the signals (information) from his immediate surrounding and uses it as feed back to the human nervous system. In this way, perception about environment gets formed. The environmental perception is generally influenced by learning and experiences of a segment of the "operational environment",² sensitivity to messages from environment and from secondary sources of information. Here, a pragmatic philosophical perspective has been adopted in which human being is not considered a Marshallian Man (rational man) but one with his limited sense by which he perceives a little world around him. Within this environmental perception, human being possesses affective attitudes and affective responses or emotion and cognition to environment. In these perceptual and cognitive processes, human being gets acquainted with cognitive map of the operational environment. It is the "operation environment" which impinges upon human behaviour and his spatial setting.

It includes the physical and man-made aspect of environment (in which culture and its aspect as eco-politico-social systems and institutions play various roles. It identifies the evolution and diffusion

² An "operational environment" is considered as a subset of the general environment which has an effect on man directly or indirectly.

of culture over time through technology. It recognises the complexity of changing variables interacting between culture and environment through technology. This process oriented approach of “operational environment” recognises how different dynamic components of culture such as social, economic, political and demographic interact with environment and form the human–edifice (culture). It further, creates and influences the cognitive process of a group of individuals to perceive or to act within it.

RELATIONSHIP BETWEEN ENVIRONMENTAL SCARCITY AND ENVIRONMENT

Within an environmental perception, human being possesses affective responses and affective attitudes to environmental disaster, for example, an earthquake in a remote area of Alaska is of far lesser significance to a person than to a person living in Mexico city. Same way, a person living in a semiarid or arid area feel much more uneasy from an average flood than a person living in flood plain feels in the same intensity of flood. Thus, environment influences the human behaviour that reflects in distinct culture setting. It is a two way process in which complex web of variables as nature resources and elements of biosphere, and human culture, interact and influence each other.

But before the emergence of environmental concerns, especially during the last few decades, the agencies associated with economic developmental activities considered environment a thing to be exploited, blatantly, to increase or to speed up economic growth. “These environmental concerns came up with the question whether the spectacular economic growth, particularly in the developed countries had been a cost less wind-fall, at all. There has been growing consensus that this growth has at least in part contributed to the impaired environment through the depletion of non renewable resources and damages to the physical environment”. (International Labour office’s Report 1992, edited by A. S. Bhalla).³

Technological changes and economic model based on “economic reductionalism”⁴ failed to respect environment or to realise the significance of ecological perspective. There is a growing concern that such growth cannot be sustained long. Growing population and poverty also add a lot in the fashion of degrading environment. Thus whenever technological change and economic growth based on “economic reductionism” or the “growth mania” ignoring the

³ Bhalla, A.S., Environment and Development : A WEP Study, (Geneva : International Labour Office, 1992).

⁴ Raymont L. Bryant, “Political Ecology : An emerging research agenda in Third-World studies”, Political Geography, Vol.11, No.1, Jan. 1992, p.13.

significance of ecological perspective interact with poverty and population growth, they lead to depletion of natural resources, abruptly. This process, further, leads to scarcity of non-renewable resource and triggers off a reaction of irreversibility in renewable resources which, if not in the short run then in the long run, not only destabilise the carrying capacity of environment but also destroy the sustainability of it to next generation. In this way, scarcity of the resources or "environmental scarcity" is the result of man-made disturbances in his surrounding, or ecological imbalance situation.

From the ancient days the environmental impact on human society has been a matter of discussion and debate. This relationship between man and environmental has gone through different philosophical perspectives such as environmental determinism, possibilism, 'stop-and-go' determinism, etc.; and over all synthesis of all : environmental change and conflict.

A lot of literature and research findings highlighting a clear-cut connection between environment and security (conflicts) have been published. The sources of environment scarcity such as environmental change, population growth and unequal distribution of resources increase burden on an ecological setting which leads to economic deprivation and marginalisation of poor people. This causes

disturbances in ecological systems by migration of the people to the ecologically fragile areas or by compaction of people over an area, further aggravating environmental degradation and poverty. In this way, an area gets plunged into the cycle of environmental degradation and destabilisation of socio-political institutions that may lead to conflicts. If socio-political institutions are insurgency and interstate conflicts.

SOURCES OF ENVIRONMENTAL SCARCITY

Environment, holistically, encompasses physical resources and biosphere or biotic and abiotic elements, which not only interact within their sphere, but interaction also takes place between both. In the same way, human beings not only interact within their own species but also with other species of the organic world wrapped by physical surroundings. Like as other organism, human being is also influenced by the environment, but are more likely to have an impact on environment through technology. Pursuing development model of “economic reductionism” and technological development devoid of ecological perspective have led to environmental degradation which has caused impaired damage. Population growth and poverty also contributed a lot in this phenomenon.

There exists a lot of contradiction in delimiting the framework of environmental scarcity. Libiszewski (1992)⁵ questions the general tendency among the scholars to highlight the scarcity of non-renewable resources and its linkages with conflicts. But on the other side, many scholars, such as Homer Dixon, Jeffrey H. Boutwell, George W. Rathjens etc.⁶ consider environmental scarcity as renewable resources scarcity. While Narottam Gaan (1995)⁷ has highlighted “deriving” the concept of natural resource scarcity from the domain of the concept of environmental degradation, can one say with scientific precision that depletion of non-renewable will not contribute to environmental degradation.”

Arther H. Westing (1989)⁸ has also included both renewable and non-renewable resources in the ambit of environment and conflicts. Here, he points out that the source of environmental

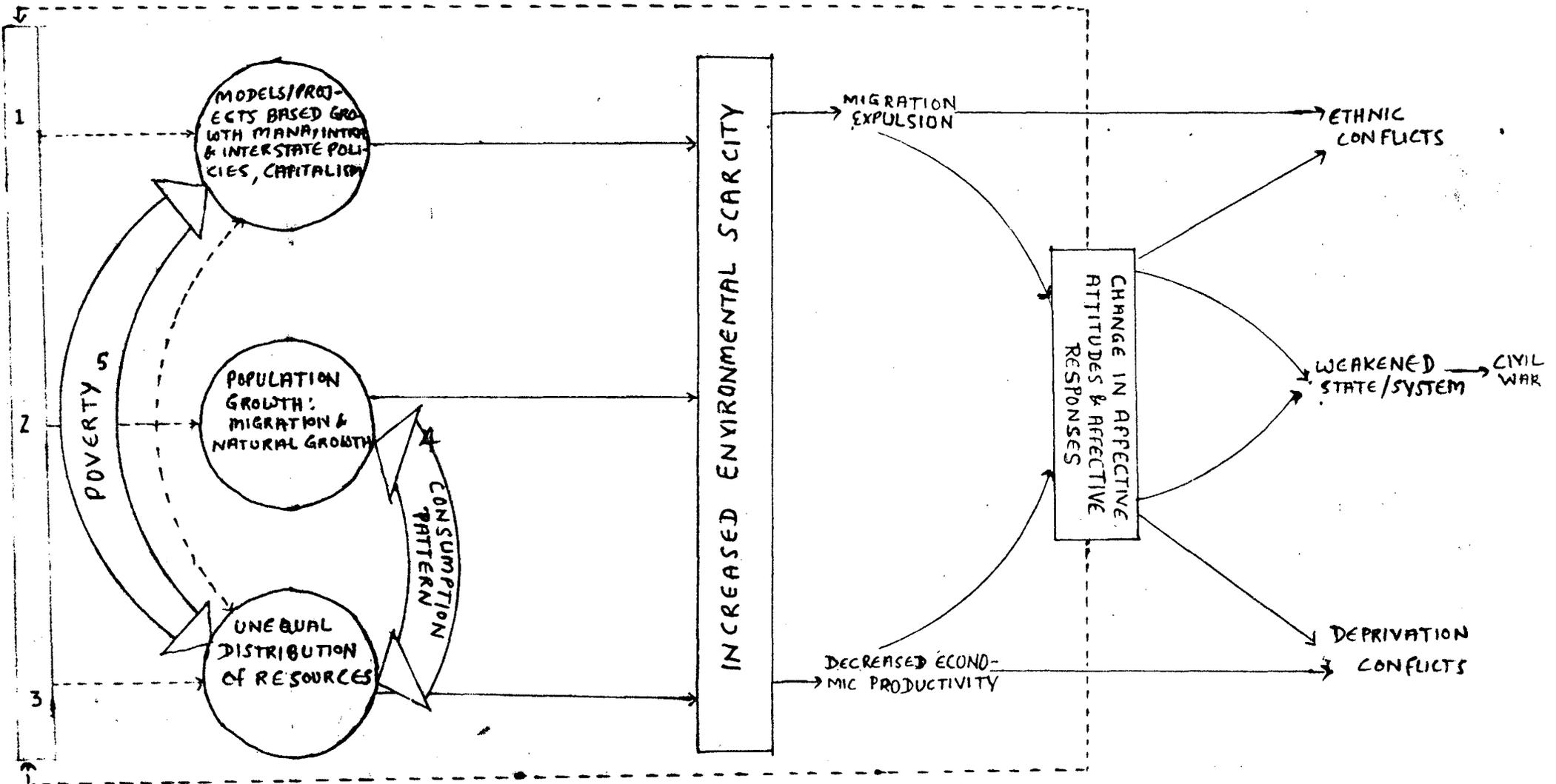
⁵ Libiszewski, S., “What is an environmental conflict?” ENCOP, Occasional Paper No. July, 1992, Centre for Security Studies and Conflict Research, SFIT, Switzerland, pp.1-5.

⁶ Homer-Dixon, T.F. (Ed.), “Environmental Change and violent Conflict”, Scientific American, Feb. 1993, pp.38-45.

⁷ Gaan Narottam, “Environment and Conflict : The South’s Perspective”, Strategic Analysis, Sept. 1995, pp.827-41.

⁸ Westing A.H., “The Environmental Component of Comprehensive Security”, Bulletin of Peace Proposals; Vol. 2. No. 20, 1989, pp. 129-34.

ENVIRONMENTAL SCARCITY AND SECURITY



A MODIFIED VERSION OF HOMER-DIXON'S MODEL

IN "ENVIRONMENTAL SCARCITIES AND VIOLENT CONFLICT"
INTERNATIONAL SECURITY, VOL. 19(1), SUMMER, 1994, P. 31.

degradation leading to conflicts are found in the domain of both non-renewable and renewable resources.

Although, in holistic perspective of ecological setting, both renewable and non-renewable resources are analysed with variable interferences by human being, but, in most of cases, renewable resources have been matter of focusing. Because of their potentiality of setting up a process of reversibility after a limited disturbance; and a chain reaction of irreversibility after disturbances or degradation by human interference beyond resilience. So, this paper focuses on the renewable resource scarcity, but due consideration is also given to non-renewable scarcity induced disturbances in renewable resources. For example, depletion and exhaustion of coal and oil resources triggers off overutilisation of the alternate resources such as forest and water channels. On the other side of the coin, depletion or exhaustion of non-renewable resources such as iron, coal etc. in an area leads to shifting of the industries in other areas that disturbs the ecological setting of the later one.

Homer Dixon (1994)⁹ has pointed out three sources of environmental scarcity. “Environmental change is only one of three

⁹ Homer-Dixon T.F., “Environmental Scarcities and Violent Conflict: Evidences from Cases”, International Security, Vol. 19(1), 1994, pp. 5-40.

main sources of scarcity of renewable resource, the other are : population growth and unequal distribution of resources. The term environmental change reflects a man-made disturbance of quality and quantity of a resource. It occurs when human made disturbances fasten the rate of depletion and degradation more than renewable rate by natural process. Highlighting the conceptual sources of environmental change, Raymond L. Bryant (1992)¹⁰ states “environmental change to be related to the State policies, interstate relationship and global capitalism”. Undoubtedly, the contextual sources extensively highlighted in literature are the state policies. As referring to Walker (1989),¹¹ L. Bryant has pointed out “an interest, continuing potential for conflict between the state’s role as developer, as protector and as steward of the natural resources on which its existing ultimately exists”. Economic policies, economic planning programmes and projects have severely hammered the sustainability of environment distorting biodiversity of a region. For example, the non-cropping pattern of cultivation in Central Asia has severely distorted biochemistry of soil causing impaired damage to biodiversity

¹⁰ Raymont L. Bryant, (1992), pp. 15–20.



of the region; different developmental projects in the Western Ghat of India have degraded the environment etc.

Many area specific programmes in the name of development have actually degraded environment, such as, the forest development programmes and the hilly area development programmes in India. Without proper consideration of the local people in a holistic perspective of biodiversity, this kind of programmer has sped up rate of degradation instead of preservation. Hurst (1990),¹² Guha (1990),¹³ Homer Dixon (1994)¹⁴ have highlighted it, aciduously. The state intervention in eco-geographical regions has acted as an agent of change in the mode of production. It has also aggravated the situation of environment change. For instance, if the pastoral activities in ecological fragile areas are taken over by settled agriculture, it leads to severe soil erosion. Homer Dixon (1994) has highlighted this trend precisely.

Interstate sources of environmental change encompasses interstate conflicts. It brings out environmental degradation caused by

¹¹ Walker K.J., *The State in Environmental management: the ecological dimension*, Political Studies, 37, 1989, pp. 25-36.

¹² Hurst, P., Rainforest Politics: Ecological Destruction in South-East Asia, (London: 2 Ed Books, 1990).

¹³ Guha, R., "An early environmental debate: the making of the 1878 forest Act", Indian Economics and Social History Review, 27, pp. 65-84.

¹⁴ Homer Dixon, T.F. (1994), pp. 5-40.

military intervention by one state in another one. In most of the cases, the political boundaries are inharmonious and non-correspondent with their ecological region. It divides an ecogeographical region in more than one political boundaries such as the Thar desert is divided between India and Pakistan; same as the Himalayas, the Aral sea Basin the Syr Darya Basin, the Amu Darya basin, the Bharamputra basin, etc., are divided into more than one political boundaries. Thus, any disturbance in ecological balance in any part of an ecological region shakes the whole region. Other aspects of interstate sources of environment change are international agreements on resources utilisation, financial aids, transfer of technology, etc. Secondly, interstate sources of environmental change get stimulus when eco-political differences come in the way of international cooperation and management of resources. The suitable example of this trend can be the watershed management programmes in an ecogeographical area which falls in more than one political boundary. This subjects the environment to disruption or degradation.

Thirdly, a plethora of literature and research works has appeared highlighting interrelations between capitalism and environmental change. Capitalism came up with cutthroat competition based on market mechanism in which blind pursuance of profit making

activities prevails. The rolling back of the state, high mass consumption and profit oriented production ultimately lead to ignorance of ecological perspective. This system of exploitation of natural resources and emission of waste material in excess of maximum sustainable yield causes impaired environmental degradation. It has been highlighted very precisely by Johannes B. Opschoor (1989),¹⁵ Arther H. Westing (1989),¹⁶ etc.

Environmental change particularly refers to a man-made deterioration in quality and decline in quality of a renewable resource. But, Homer Dixion (1994)¹⁷ pointed out that this concept has limited the scope of environmental-conflict research. Because this concept doesn't offer relationship between people's sharing of resources and unequal distribution of resources.

Other sources of environmental scarcity are population growth and unequal distribution of resources. Increase in compaction of population in an ecological setting reduces per head availability of resources by dividing it among more people. Thirdly, unequal

¹⁵ Johannes B. Opschoor, "North-South Trade, Resource Degradation and Economic Security", Bulletin of Peace Proposals, Vol. 20(2), pp. 135-42.

¹⁶ Westing, Arther H., "The Environmental Component of Comprehensive Security", Bulletin of Peace of Proposals, Vol.(20), pp. 129-34.

¹⁷ Homer-Dixion, (1994), pp. 5-40.

distribution of resources means concentration of resources in the hands of small section of population.

In this way all these sources lead to reduction of a resources per head, these resources are highly interrelated and interwoven each other to be analysed, simultaneously. Besides these, there are some other sources of environmental scarcity such as pattern of consumption, poverty and people's perception of an environment. Population growth becomes the cause of environmental scarcity, especially, when accompanied with pattern of consumption and poverty. As Ac. P. Bifani (1995)¹⁸ has highlighted an estimated figure that an average American consumes at least 1500 kg of agricultural product per year while a Chinese consumes only 600 kg. In the case of energy consumptions, an American consumes every year an amount equivalent to 55 barrels of oil whereas a Bangaladeshi consumes only 3 barrels. Thus, consumption pattern, poverty and people's perception, directly and indirectly, control the rate of degradation of resources. Poverty, solely, in term of deprivation is inadequate for an understanding of its implications and impact on the environment. This concept becomes relevant to environmental degradation when it comes with

¹⁸ Ac.P. Bifani, "RURAL DEVELOPMENT AND ENVIRONMENT", in A.S. Bhalla, Environment and Development: A.W.E.P. Study, (Geneva: International Labour, 1992).

marginalisation of the people and vulnerability of the ecogeographical region. The relationship between poverty and the environment also has been recognised at the World Commission on Environment and Development (WCED, 1987), "Poverty is major cause and effect of global environmental problem" (WCED, 1987).

Some regions have been recognised ecologically fragile (the arid and semi arid region, the mountain region, the pastoral land, the humid – tropical land, etc., due to their poor state of resilience or reversibility wherever distributed). Evidences on the degradation of the environment comes up with deforestation, soil erosion, desertification, soil salinisation, alkalization and water logging are related to soil erosion; water pollution, floods, drying up of river canals, decrease in under ground table are related to water degradation; and in the same way the atmosphere also faces the challenges of disruption in the bio-chemical cycles. All these disruptions and degradations seem as result of disturbances in maximum sustained discard and in excess to maximum sustained utilisation. The empirical evidence presented in various studies have often, highlighted the scale or intensity of these processes at work in the ecologically fragile regions. Some of these evidences, surely, have not remained uncontroversial. But this study doesn't indulge in the

controversy of degree and scale of the processes at work rather than their over all tendencies and direction.

SPATIO-TEMPORAL DIMENSIONS OF SECURITY

The concept of security has changed a lot from power projection capabilities within a military framework ^{to} of a comprehensive human security.¹⁹ As the concept has been drawn from the Universal Declaration on Human Rights, it includes two interrelated components : political security (encompassing military, economic, social sub-components) and environmental security (encompassing protection of environment and sustainable utilisation of resources).

During the days of the cold war, power project capabilities such as number of nuclear warheads, supersonic fighter planes, nuclear submarines, etc.; were the thrust of security. This pervasive militarisation set up the geopolitical codes of many countries and a new world order was fashioned by the superpowers emerged. Even during the cold war period, the narrowness and misleading aspects of the concept were released. The militarisation of the concept restricts

¹⁹ Westing A.H., "The Environmental Component of Comprehensive Security", Bulletin of Peace Proposals; Vol. 2. No. 20, 1989, pp. 129-34.

the dynamism of security. According to Michael D. Purugganan,²⁰ the concept of security has changed through out the time according to the needs of circumstances. During the 1960s importance of economic development activities and their protection appeared on the surface, full-fledgedly, when the US Administration considered to secure adequate supply of resources to the US economy as a matter of security. The concept of security with comprehensive understanding was discussed at the first UN conference on Human Environment held in Stockholm in 1972; and officially was adopted as environment security in the 42nd session of the UNGA (1987). Obviously, comprehensive understanding has emerged in responses to severe threats to the environment. An expert on this topic, Arther H. Westing (1989)²¹ brings out how the numerous cross linkages among the various dimensions of comprehensive security are exemplified by the concept of sustainable development. Sustainable development is highly associated with intertwining of economic and utilisation subcomponents of the comprehensive security. This leads to conclusion that people are not only to be protected from military

²⁰ Purugganan, Michael D., "Environmental, Resource and Conflict: The Changing Context of International Security" Development, 2, 1993, pp.28-32.

²¹ Westing, A.H., (1989), pp.128-134.

threats but also from “threats of socially unjust and environmentally unhealthy conditions.” (Arther H. Westing, 1989).

Recently many categories of (in) securities have appeared on the surface which reflect the pervasiveness of comprehensive security such as military insecurity, economic insecurity, ideological insecurity, social insecurity, etc.

The framework of the concept “security” changes from nation to nation and from one ecogeographical region to other. There exist a number of environmental problems at less than global level, and many problems at global level, such as the global warming, ozone gas depletion, extinction of species, etc., (more or less at global level); degradation and loss of good agricultural land, water pollution and depletion of fisheries, exhaustion of natural resources, etc. (are more at local than global). An eco-geographical region might be a desert or semi desert, hilly region, a pastoral land, a sea or a lake. Every region has its intrinsic characteristics resulting from interrelation of complex ecological and geographical elements. Due to this distinction each region has different bio-chemical cycles which provides, to some extent, independence of a region contiguous to it. But, in a network of the whole system an ecogeographic region appears as a part of global system by no means is fully self contained, but having more or less

linkages to global environment. With an ecogeographical regional consideration, it can be analysed that in a hilly region, overburden of population or (and) switching over to intense agricultural activities leads (lead) to deforestation and soil erosion diminishing the carrying capacity of the region. When this process of irreversibility intertwines with under-endowed social-political institutions of this region, it leads to social tension, instability, social strife and social conflict, and, some times, civil war. In many cases, environmental scarcity can shake socio-political institutions and causes a state of instability any insecurity, etc.

The global environment comprises of many eco-geographical regions interrelated through many complex linkages of bio-chemical cycles and flow of energy and material. Any disturbance in one region, directly or indirectly, influences other regions, such as global warming, Ozone depletion, river basin problems, soil degradation and depletion etc. For example, industrial pollution of England industries blows to and influences the Scandinavian countries. The hypothetical nuclear winter caused by explosion of nuclear bombs endangers the state of environment, globally. So, environmental degradation poses the great danger to the security of a region, in particular, and to global system, in general. The sense of insecurity penetrates into affective

attitudes and affective responses of a person or a group of individuals as a stimulus or stimuli. These stimuli are various complex variables of the environment which impinge upon human behaviour through the process of reciprocity, in which affective attitude and affective response evolve. Man's understanding, in reality, always lags behind the actual happening in his surrounding which is known as "time-lag".²² This time lag is associated with human made-disturbances because of delaying in consequences and human's inaccessibility to the consequences, further, reflects in human's incompatibility to these consequences.

For example, excess use of chemicals in a cultivable land gives higher productivity but the cultivator hardly knows the cost (side effects) of this applicability. Even if, through technology or innovation he knows, population growth with high consumption pattern, poverty, and unequal distribution of resources make susceptible to continue his pursuance. The company of under-endowed socio-political institutions aggravate the situation that accelerate the process of environmental degradation. Due to the environmental degradation when the process of relative isolation and economic marginalisation

²² Reginald G.G., Analytical Behavioural Geography, (London, CroomHelm, 1987).

come up with the sense of insecurity of the basic needs, it further weakens the socio-political institutions and causes conflicts.

Environmental Scarcity and Security

Environmental scarcity is mainly caused by three sources: environment change, population growth and unequal distribution of resource. Besides these sources of environmental scarcity, poverty, consumption pattern and sense of belongingness also play significant role.

Other causes of environmental scarcity such as consumption pattern, poverty and a sense of belongingness, interacting with environmental change, population growth and unequal distribution of resources, accelerate the process of irreversibility in ecological attributes. It leads to degradation of renewable resources and extinction of non-renewable resources.

To avoid complexity, and considering characteristic of reversibility and bio-chemical cycles of renewable resource, the emphasis has been laid down on renewable resource scarcity. When, degradation in resources combined with population growth offers adequate opportunities to the elites to appropriate resources that lead to contraction of resources in the few hands. It causes acute environmental scarcity for the poor whose claims are opposed by the

powerful elites known as “resources capture”.

A sense of belongingness comes up with a responsibility, felt by a person to his surrounding in which he has grown up. Which seems as a result of interaction of complex variables that leads to distinct codes and conducts of behaviour, different dialect, fashions and different social systems. This surrounding is associated with a person’s survival which teaches how to respond to the ecological setting. For example, a tribal is much friendly to his surrounding than an alien.

In shanty towns and in the marginalised areas, the people possess common platform to strengthen their voices. Under this process of assertion of their rights by the poor and marginalised people, many institutions which come in the way faces adverse consequences. It disturbs social system and destabilises economic institution that, further, reflects into social strife, struggle and acute conflicts.

Secondly, a wave of migration in an ecogeographical region may lead to causes of social tension. Undoubtedly it might be forced by the “push factors” in the former setting. But, this migrated section of population acquires the land and other resources depriving the local people, economically. In a colonial system or in a democratic set up, these people (migrated people) come in the way of overall development of local people. It seems right in saying that the migrated

people become the result of war or conflict between the territories or lead to an agreement on substandard conditions on the local people, as in Assam (INDIA), the Lalung tribe is struggling against the Bangladeshi migrants. A state of resentment is also found in the Central Asian countries against the Russian and other nationalities. State of insurgency in Tripura and Manipur in India is the result of the migrated Hindu business communities in these areas.

Reduction of productivity in the developing countries is caused by resources degradation, and depletion by economic 'growth-mania' based models, projects, ecologically inharmonious-technology, consumption pattern, unequal distribution of resources and population growth. For instance, in the erstwhile Soviet Central Asia, ecological vulnerability is highlighted by falling water level of the Aral sea, the degraded chemistry of soil of arable land, 3 times more disease caused by environmental problems and almost doubled mortality rate in the last few decades. The Central Asian Republics have loosely demarcated boundaries and under-endowed socio-political institutions, further, escalate complexity in sharing of the common resources as water and land etc., that may cause violent conflicts, Erosion in upland in Indonesia costs the agricultural production of nearly half a billion dollar.

In the situation, socio-political institutions go under rapid stress, and demand a lot of financial aid and political expertise to manage the acute situation which seems out of control of the underdeveloped countries. For example, the reclamation of the land requires huge amount of money and expertise. It also requires highly subsidised fertilisers and machine-tools, availability of amenities and facilities at low cost and special area programmes aimed at employment generation. The government is supposed to compensate the loss of the elites, otherwise they come with adamant way of assertion, such as, movement for separatism. Under-endowed socio-political institutions of the developing countries, hardly, meet these demands. Consequently, with decline of economic activities and productivity, displacement of population, instability of social systems and discontent in political organisation, a region gets plunged into a state of insurgency or conflicts.

“A widening gap between state capacity and demands on the state, along with the misguided economic intervention such a gap often provokes, aggravates popular and elite grievances, increases rivalry between elite fractions and erodes the state’s legitimacy” (Homer Dixon, 1994).²³ This, further, aggrandises the causes of environmental

²³ Homer-Dixon, “Environmental Scarcity and Violent Conflicts : Evidence from cases”, International Security, Vol. 20(2), 1994, pp. 5-46.

scarcity leading to “economic marginalisation” and “resource capture” which may reflect into inter-ethnic conflict or communal war.

Resource depletion and degradation, particularly, soil erosion and water depletion and degradation cause conflicts. Michael Purugganan (1993),²⁴ Arthur H. Westing (1994) and Peter H. Gleiek (1995)²⁵ have brought out this phenomenon, as in a case of a river flowing across political boundaries, one country’s access can be affected by the other’s actions. Conflicts become inevitable when a downstream country’s economic production is highly dependent on the river water. When an upstream country diverts the river water without any consideration to the people of downstream country. The situation becomes very critical when downstream country believes in rectifying it by military, for example, the relationship between Egypt and Ethiopia. If power projection capabilities of down stream country are less than upstream one’s, it disturbs the international relationship or cooperation. This, in long term can cause the displacement of population which may heat up the upstream country. This kind of relationship is found between India and Bangladesh.

²⁴ Purugganan, Michael D., “Environmental Resource and Conflict”, Development, 2, 1993, pp. 28–32.

²⁵ Gleiek, Petor G. “Water and Conflict: Fresh Water Resources and International Security”, International Security, Vol. 18 (1), 1995, p.101.

CHAPTER III

**ENVIRONMENTAL SCARCITY IN CENTRAL
ASIAN REPUBLICS**

State of Environment in Central Asia : A Spatio–Temporal Study

The concerned area, Central Asia, comprises of the five republics of the erstwhile Soviet Union: Turkmenistan, Uzbekistan, Tajikistan, Kyrghyzstan and Kazakhstan. This region falls into semi arid and arid region with mountaineous characteristics. It stretches from the Altai mountains to the Volga plain; and from the Siberian low land in the North to the moving sand dunes area of the Karakum and Kyzl–Kum deserts. The north–eastern and eastern flank of this region is covered by the lofty mountains of Altai, the peaks of Tien Shan, the Alay mountain and the Pamir mountains.

This region also encircles many water bodies: the Aral sea, the Balkash lake, the Zayshan lake; and is flanked by the world's largest lake, the Caspian sea, on the western side of the region. These water bodies are good illustrations of the inland drainage pattern, having significant influence on the climatic condition and bio–geo–chemical cycles of this region. All these get reflected in the bio diversity of this region.

This region consists of widespread low lands with high fringes on the southern flank. The geographical extension of this region has provided long thermal photo period and good cardinal temperature points for most of the crops. But scanty precipitation and high evapo-transpiration causes the acute imbalance in moisture availability to vegetation which reflects into the arid and semi-arid landscape.

Co-existence of the widespread low lands with high fringes and the semi arid to arid climatic conditions has created good pastoral land that has its impact on the living standard of the people of Central Asian Republics. Therefore, before the major process of sedentrisation, at large, the people were engaged in herding and pastoral activities moving with their livestock from one place to other with the change in seasons. In those days agriculture activities were highly confined to the streak of river valleys, such as in the Ferghana valley.

The Aral Basin which comprises most of the drainage of the region is largely fed by the Amu Darya and the Syr Darya. These two rivers, contain (73 + 37 cubic kms respectively) 110 cubic kms, out of the total 122 cubic kms water. The precipitation varies from 100 mm (4 inch) per year in the deserts in the area surrounding the sea and in the middle of Ferghana Basin, to 300 mm (12 inch) or more per year in

the foothills of the mountains of the South and the East.¹

In this type of climatic conditions, it is irrigation that can enhance the productivity of land. It was realised well by the Soviet regime to exploit the fertile soil of Central Asian republics. However, they paid scant attention to the ecological perspective. Excessive diversion of water of the Amu Darya and Syr Darya for the irrigation purpose has caused severe ecological deterioration. It has started desiccation of the Aral sea and severity in the climatic attribute such as much harsh continental climate that caused change in different attributes of biosphere changing the ecosystems.² Besides it, bio-geo-chemical cycle and bio-chemistry of the soil was severely deteriorated. Even the return flow to the river system or to water lakes and ponds is too damaged, qualitatively, to be used for any purpose. On one hand, introduction of the monocropping pattern has destroyed bio-diversity of the region, and on the second hand, the effects of the use of the excessive fertilisers and poisonous chemicals have appeared on the surface in the form of a layer. It not only pollutes water resources of the region but also pollutes air which carries it away in

¹ David R. Smith, "Change and variability in climate and ecosystem decline in Aral Basin Deltas", Post Soviet Geography, 1994, No. 3, pp. 142-165..

² The Central Asian Post, 1996 and D. R. Smith, "Environmental Security and Shared water Resources in Post Soviet Central Asia", Post Soviet Geography, Vol. 36, No. 6, 1995.

the form of particles. "one of the salient reasons for the poor and harmful conditions of the region's drinking water is the heavy use of fertilisers, pesticides and defoliant in Central Asia."³

It becomes obvious from these startling statistical reports that in the Central Asian republics the use of the chemical fertiliser was amazingly higher, such as, in Uzbekistan it was 54.5 kg per hectare while on average in the USSR was 1 kg per hectare only. Similarly, use of the poisonous chemicals and the mineral fertilisers were widely prevalent. While the average amount of toxic chemicals used in the country as a whole was 1–2 kg per hectare, in Central Asia it was 34.4 kg per hectare. It adversely affected the quality of the drinking water causing water-borne diseases. For instance, in Central Asia the infant mortality rate was double of the union's average 25/1000. In some pockets of the Central Asian republics it reached four times the union's average. As according to Patricia M. Carley (1989), infant mortality was growing tragically fast in some parts of Uzbekistan. The state of health had really reached to catastrophic condition, provoking suicides among the people. A large number of diseases such as jaundice, infection of chest and stomach, and intestinal diseases were prevalent. This situation was, further, aggravated by paucity of the

³ Patricia M. Carley, "The Price of Land: Perception of Cotton and Health in Uzbekistan and Turkmenistan", Central Asian Survey, Vol.8, No.4, 1989..

nutritious food, either due to non-availability or leakage in the storage capacities. The consumption of fish was 21 times lessor than the average consumption at country level. According to P.M. Carley (1989) consumption of meat and milk per head was 6 times and 12 times respectively, less than what was at country level.

Due to mismanagement there was extreme scarcity of health facilities. For instance, there was shortage of 28000 beds for children with infection, 45000 beds for new born infants and 14000 bed for women in Uzbekistan. More or less similar conditions obtained in other Central Asian republics. Most of the clinics and hospitals lacked the essential instruments coupled with appalling condition of sanitation. Even these medical building were devoid of transport facilities, central heating system and sewage system. Of course, these conditions were responsible for the rampant spread of diseases all over the republics. A catastrophic situation developed around the Aral sea, in Karakalpak ASSR and in the Oblast of Turkmen republic which led to the spraying of preventive chemical on the villages and distribution of the food and water supplies. It further aggravated the situation disturbing bio-geo chemical cycle of the region.

On the other side of the coin, the desiccation of the Aral Sea Basin has appeared as a severe ecological trauma. It, the forth largest

inland sea, reduced to a almost dead one within a time period of three to four decades.

Highlighting the explosive situation, the Central Asian Post (Dec. 12, 1996) brings out that “the retreating shore of the Aral Sea, up to 120 km in some parts, has exposed 27000 square km of dry sea bed where prevailing winds now form the great salt and dust clouds referred to as the “dry tears of the Aral”. These salt and dust laden winds move in belts of hundreds of kilometers wide inflicting damage and affecting weather patterns thousands of kilometers away. Apart from the desiccation of the Aral Basin has ruined down the ecological structure. It led to destruction of biomass of the sea, deterioration of soil quality and disappearance of meadow and swampy forest ecosystem, inflicting the large population in the region. It is an illustrative example of severe damage to environmental attributes.

The Amu and Syra Darya rivers, which comprise a very large portion of the drainage pattern and feed most of the area of this region, have been reduced to mere trickle throughout year. Once these rivers had been the pacemaker of salinity of the sea, now they have been reduced to the storehouse of salt remains deposited in the river basin. In the late 1980, 20–25 million tonnes of salt was found accumulated

in the Amu and Syr Darya basins each year. These dried up basins look like snowdrifts in the fields⁴.

Other water bodies in the region are not exceptional to this ecological trauma. For instance, the Kyrgyzstan's Issyk-kul (hot lake) is suffering from environmental pressure as a result of nearby agricultural and industrial activities. The recreational activities also have contributed their share in the process of deterioration of the environment. It is a large and deep lake with an area of 6236 km,² situated at an elevation of 1608 meters in an intermontane basin in the Tien Shan mountains. Because of its enormous volume (1760 Kms³) and large depth, its open part does not freeze over in winter. But from the last few decades, the level of Issyk-kul has been declining considerably. According to Andrew R. Bond (1994),⁵ although technically controlled subsidence has been one of causes of the decline but the mean annual fall in its level (7.7 cm) per year over the period (1946–1974) is believed to correspond fairly closely with declines in inflow resulting from consumptive uses in irrigation and industries. Like as soil of arid areas, the content of salinity in this region is found high. The excessive diversion of the rivers' water for stepping up the

⁴ The Central Asian Post, Dec. 12, No. 9, 1996 .

⁵ Andrew R. Bond, "Issyk-Kul Resort Zone under environmental pressure", Post Soviet Geography, Vol. 34, No. 5, 1994, pp. 326–328.

region's cotton production and expansion of the wheat cultivation, especially in the northern part of the region has increased salinity in the upper layer of the soil profile of the region. It also has led to sharp increase in salt content in the rivers basin through the return flow. It has appeared, very clearly, in the case of small-small lake or in place of water lodging in the form of hard salt layer. For example, in all the republics, arable land has undergone degradation. In the case Kyrgyzstan; wind and water along with salinization of soil has deteriorated a land of 850,000 hectares about $\frac{2}{3}$ of the total has become worthless. It has destroyed bio-chemical composition and bio-chemical cycle the soil that has resulted into deterioration of the ecosystems, blatantly. On the second hand, desiccation of the Aral Basin, according to some Russian studies, has endangered the life of the millions of people. As the Central Asian Post (Feb. 6, 1997) highlights citing Friedman Muller that about 78% of the people residing around the Aral Basin are ill and the toll of death among new born babies has reached 10 percent.

In these republics, only Kyrgyzstan and Kazakistan possess considerable cover of forest. Forests help retain moisture in soil, decrease erosion of soil, protect and revive biodiversity and work as pacifier to natural calamities.

In this region, this resource is also on the verge of instability as the forest land in Kyrgyzstan has declined from 1.19 to 1.09 million hectares over the period of 1973–93. An analytic study of population dynamics of the region also doesn't give pleasing situation. A picture of population density in this region seems quite easing, such as, in Kazakhstan, 6.3 persons/Km²; in Kyrgyzstan, 24 persons /km²; in Tajikistan, 48 persons/km²; in Turkmenistan 8.5 persons/km²; and Uzbekistan, 51.6 persons/km². But, in the relative sense, considering the compaction of population over the arable land, it gives much more realistic picture of the phenomenon. The population density, per square km to the arable land in the five republics : Kazakhstan, Kyrgyzstan, Tadzikstan, Turkmenistan and Uzbekistan is 42, 843, 716, 278 and 322, respectively. The population is highly concentrated in the river valleys such as in Fargana valley and Osh valley, it varies from 300 to 500 per square km. This situation becomes very volatile when the available land is deteriorated or eroded by wind and water with salinization and poisonous chemical. The soil–chemistry and bio–chemical cycles of land have been deteriorated and disturbed by excessive application of water and poisonous chemicals in the region. The problem seems very aggravated due to insufficient water supply for sanitation and even for drinking; the question of contamination of such water is far away. Most of the rural population fetches drinking

water from the open canal contaminated with high content of salt and poisonous chemicals and totally inhygienic conditions. It seems to be the major cause of the pervasiveness of diseases in the region which results into high infant mortality rate and deadly diseases.

Central Asia falls under arid to semi-arid region and most of its population is concentrated in a few pockets. For instance, most of the rural population of Uzbekistan is concentrated on 4.5 million hectares of irrigated arable land in the oases and along the rivers, a merely 16% of all agriculture land in the country.

Nutritional density⁶ of the population in Uzbekistan is 2.7 persons per hectare of land, compared to 0.5 in the European republics. Population density in rural region has been increasing over time because of two factors: Firstly, it has high natural growth rate (240/1000 in 1991) and secondly, it has large family social structure in which average family has 5.5 persons. The cultural traditions in Uzbekistan encourage the young people to stay in family close to their parents. These two factors have caused a steady increase in the rural population from 57.7% in 1984 to 61% in Jan. 1994. "Rapid growth of

⁶ Nutritional density is the density based on ratio between total population and cultivated area. This gives better indication of the standard of living.

population in Uzbekistan has necessitated continuous expansion of irrigated area over the years”, David R. Smith (1994).

The surface flow provides more than 95% of water used for irrigation. But in the last few years (1989–93) ecological concern over desiccation of the Aral sea has led to a decline of about 10% in irrigation, so that water can flow to the Aral sea.

Prior to this large scale extraction of the rivers’ water, which has led to desiccation of the Aral sea, this region was experiencing wide variety of flora and fauna. Due to the dessication of the deltas of the Syr Darya and Amu Darya, the number of species has been reduced drastically, and their population and distribution have been distorted. For example, deltaic ecosystems have evolved from dominance by hydrophytic species (little or no drought tolerance) to dominance by xerophytic (drought resistant) David R. Smith (1994) has highlighted that dense tree and shrub flood plain forests, known as “tugay” (riverine forest) ecosystems, occupied from 3 to 20 percent of both deltas. Citing Kuznetsov (1991) and Novikova (1990), he brings out that the 50 percent of existing riverine forest in the Amu Darya consists of standing deadwood because they have been exploited for irrigated agricultural production.

Causes/Sources of Environmental Scarcity

In Central Asia, sources of the state of deteriorated environment, at large, seem embedded in highly centralised administrative command system of the erstwhile USSR. Under the framework of the Gosplan, planners had encircled around the benefit of economies of scale of massive development and hardly had any concern in favour of ecologically viable investment. During this period, they were persuing the ideology of “harvesting nature” to extract huge benefits out of each plans. Consequently, big construction projects, switching over intensive agricultural activities in pastoral lands and construction of long oil and gas pipe lines appeared on the surface. In most of the cases, it appeared not in concord with existing environmental attributes.

In Central Asia, long thermal photo period, fertile soil and huge water resources of the Amu Darya and the Syr Darya attracted the attention of the central authority to extract benefit out of these conditions. Here, the central authority mainly proceeded in two directions. Firstly, they brought more and more land under cotton cultivation, and secondly, they expanded area under the plough with introduction of new irrigation system. For example, in Uzbekistan thousands of hectares were introduced to new irrigation system every

year from 1976–1980 and so on. Upto the mid 1980's, planners pursued 'growth based' targets without any concern to ecological attributes.. This resulted into pollution and degraded the environment. "It has become an impediment to development – not just in few localities, but for national economy.... It reflected the general alarm over the devastating effects of industrial pollution on public health" (in Turnbull, 1991), and state of irreversibility in environmental attributes such as the desiccation of the Aral sea and associated ecosystem. It compelled and made the Soviet political rhetoric to manage environment friendly as a social good, the necessity of which was undisputed. But , whenever it faced the ground reality with economic decision making, it was defeated badly.

As in case of Central Asia, the authorities in Moscow and in Central Asia had increased area under cotton cultivation blindly. It led to diversion of the surface flow in the region to the extent that a dramatic decline of the combined flow (from 110 kms annually to essentially no flow in 1985) of the major rivers that feed the Aral sea.

It has been highlighted by David R. Smith, (1994) by citing N.V. Aldin, (1990) that area under irrigation in the beginning was 1 million hectares in 1900, to 405 million hectare in 1960 and to 7.5 million hectares in 1992. At the same time, the increasing amount of

return flow was diverted to the distant interior drainage basin, none of this was allowed to the rivers from which it was diverted. The Soviet authority was put into operation to show out some concern over the alarming situation. Of course, it led to conceptualisation of a framework for environmental management which was intrigued in organising economic reform towards efficiency (that was an achievement in the quality and quantity of their production, profits, and environment management). This is called Khozraschet. The whole system was so centralised and embedded in administrative command system that every decision about the per hectare production was targeted, and inputs therein were determined in the central laboratories which were set up under the auspices of the Central Authorities. As Zvi Lerman (1996)⁷ highlights “this was inherently an outcome of administrative command system that imposed physical production targets and thereby relieved the individual farmer and farm manager of any profit responsibility, any motivation for efficiency and improvement.” The whole system was passing through a high degree of mismanagement because there was hardly any coordination between farm management and the authorities in the centre. This process had bad repercussions on productivity in this region. To increase or to

⁷ Zvi Lerman (ed.), “Land and Water Policies in Uzbekistan”, Post Soviet Geography and Economics, Vol. 37 (3), 1996, pp. 145–174.

achieve targeted production per unit of area (productivity), farms increased the application of inputs above the required level. Farms were not accountable for the excessive use of the inputs distributed through the central pool. This kind of trends were very pervasive in the erstwhile Soviet Central Asia. As Patricia M Carley (1989) has brought out that use of chemical fertilisers was amazingly high in Central Asia, for instance, in Uzbekistan it was 54.5 kg per hectare while on average in the USSR, it was 1 kg per hectare. An average of toxic chemicals used in the country as a whole was 1.2 kg per hectare but in Central Asia it was 34.4 kg per hectare.

On one hand, the excessive diversion of the surface water of Amu Darya and Syr Darya has led to the desiccation of the Aral Sea to a catastrophic level. On the second hand, the excessive watering of cultivable land has led to major problems such as water logging and salinisation. According to David R. Smith, (1994), "approximately 100000 hectares of irrigated land in Karakalpakstan were affected by salinity between 1968 and 1985 representing more than 60 percent of the total sown area in the Amu Darya delta." Mismanagement and its inherited causes led to excessive applications of toxic chemicals, chemical fertilisers and cotton defoliant which not only distorted bio-chemical composition of soil but also bio-chemical cycle of soil. It

polluted the upper layer of soil profile of the region causing deposition of hard layer of these chemicals as well as underground water when it got filtered deep. As Young Kulchik and etc. (1994) have highlighted that “mechanised cotton picking proved inefficient in many case, and thousands upon thousands of women and children were forced to do the job. The large scale use of defoliants in Uzbekistan since the 1970s has resulted in a spread of unsuccessful pregnancies, still births and genetic diseases among the Uzbeks (statistics of infant mortality were kept strictly confidential and were distorted at all levels). School children in the rural area have to spend several months of every school year in the cotton fields.”

The cotton cultivation had become the priority for Moscow not for the general welfare of the people who cultivated it but for economic benefit of the union as a whole. It reflected into the data which appeared on the surface after the introduction of Gorbachev’s changes in Soviet Union’s policies. “It led to a distortion of the normal courses of economic activities and social development and of the region’s infrastructure. It also disrupted the health, social institutions and education set up in Central Asia. The use of defoliants and pesticides in these amounts have caused emergence of epidemics of infectious diseases, jaundice, miscarriages and birth defects. The pollutants were often scattered not

only on the cotton field but on the heads of the peasant working there. In reality, the central authorities tried to dilute the linkages between high rate of infant mortality and other health problems by research work. Research works were highly distorted and objective oriented. Some results of manipulated research work indicate that women working in cotton factories show much higher rate of the infectious disease than at the cotton fields.

Official explanation for growing incidence of self-immolation among Central Asian women was very ridiculous as it stated that this incidence was embedded in survival of the past and in the Islamic rituals. But, the reality behind the incidence seems exposed by Yakutov (in Patricia M. Carley 1989) that it was oppressive conditions of life, exhausting work from dawn until dusk, watching children all the while and a terrorised state by the brigade. The tradition of large family in Central Asia and the high birth rate were blamed for the shooting up infant mortality rate there. But, this state of havoc was result of highly deteriorated and polluted state of environment and pathetic conditions of working women at the cotton fields. As Patricia M. Carley (1989) has highlighted that it was aggravated by pervasive state of corruption which reflected into high degree of paucity of essential materials and nutritious goods; and appalling and forsaken condition of health facilities and basic amenities. This region predominantly remained producer of primary

goods and confined in the primary activities that restricted the overall infrastructural development. It remained net exporter of agricultural product such as cotton and tobacco and a great importer of the final goods. It distorted the strong fibre of Central Asian economy into a dependent economy.

Central Asia was traditionally predominated by the Turkic nomads. In the region of steppes were the Kazakhs and the Kyrgyz, in the desert areas were the Turkmen while in some parts of the desert, especially, in oasis belt experienced sedentarised settlement of the Tadjiks and of the Uzbeks. D. Sinor and ed. (1990)⁸ has highlighted that though there had been little economic interaction between the nomads of steppes and sedentarised people of the oasis, but the relationship of military alliances was frequent based on mutual hostility. They came under the influence of Islam earlier or later. As the settled people of the oasis accepted Islam earlier but the nomads were converted over a much longer period and remained deeply imbued with traditional symbols and customs. It offered kaleidoscopic nature to Central Asia culture which talks of homogeneity based on the origin and the sect of the religion.

During Russian colonial regime the native institutions of these states were affected little because they continued their obligation to tribal

⁸ D. Sinor and ed., *The Cambridge History of Early Inner Asia*, (Cambridge, Cambridge University Press, 1990).

system such as clan and sub-clans, etc. But due to the backwash effect of the colonial regime these states became dependent on Russia.

Consolidation of this region into Soviet power took place after the October Revolution when the Communist regime introduced the new mode of production under highly centralised and authoritative system. Under the process of modernisation, these 'tribal states' came into existence as the five republics through the National Delimitation of 1924–25.⁹ This delineation was basically based on language which was considered as basis of a nation. This delimitation was performed so roughly and authoritatively that it created a lot of complexity and misproportional division of population such as, mainly, only 63.7 percent of Tadzick population was domiciled in Tadzickistan at the time of first Soviet census in 1926. According to the Soviet census in 1926, in Khazakhstan, the Kazaks comprised of 93.6%; in Kyrgyzstan, the Kyrgyz 86.7%; Turkmen in Turkeminstan 94.2% and Uzbeks in Uzbekistan were 84.5%.

⁹ Uzbekistan and Turkmenistan were delimited in 1924; whereas Tadzickistan acquired the status of a republic in 1929; and Kyrgystan and Kazakistan in 1936.

CHAPTER IV

ENVIRONMENTAL SCARCITY AND SECURITY IN CENTRAL ASIA REPUBLICS

Ethno-Cultural Aspects :

All Central Asian states are plural societies comprising various nationalities and ethnic groups, albeit in various degrees. Though, four of these republics possess a degree of homogeneity by their Turkic and Islamic origin (Sunni Muslims) yet, generally there exist "strong cultural and historical differences"¹ on the basis of clan, tribe, region and different customs. This pluralistic characteristic of the society got a new political orientation when the Soviet authority delimited the five republics based on ethno-linguistic criterion. It was an arbitrary division of the region in which a lot of over-lapping and superimposition of different nationalities was a common phenomenon. It added a new chapter in the diversity of the republics. Firstly, the boundaries were delineated very roughly such as originally Uzbeks comprised of 84.5% in Uzbekistan and Tajiks only 63 percent in Tajikistan; secondly, the Soviet authorities also deported a large

¹ Shirin Akiner, *Conflicts Stability and Development in Central Asia* in Lue van de Goor, "Between Development and Destruction : An Enquiry into Causes of Conflict in Post-Colonial States," (London : Macmillan Press Ltd., 1996).

number of people belonging to different nationalities such as Meskhetian Turks and other Caucasians, Russian, Germans, Jews, Koreans, etc. at different point of time to Central Asian Republics.

The drawing of the boundaries provided new physical framework in the hand of the Soviet authorities to deconstruct and to remould the traditional structure. By introducing socialist mode of production, they ruptured the traditional mode of production and social fabric of the society. It was highly backed by an education system which legitimised new identity and regime. As Shirin Akiner (1996) highlights that the political socialisation of population was supported by a programme of mass education aimed at both children and adults. It was a well planned programme under which they destroyed social infrastructure Islamic schools, colleges and Islamic courts and other religious institutions; and imposed their ideologies and the regime. All attempts were made to eliminate the influence of Islam and to dismantle the traditional set-up of the society. Of course, these organised attempt changed the physical appearance of the region with wide metalled broaden roads, multistorey buildings, new western style restaurants and new political social outlook. But in the private domain, the nature of personal relationships including those between of the generation remained unchanged. However the new networks, despite

their different composition, functioned in a very similar manner to the traditional structures.

In the past, Central Asia has experienced days of tranquility inspite of some military alliances based on mutual interests. The pluralistic characteristic of the society was never matter of manipulation of ethno-politics or of clan-politics as it appeared during the last days of the Soviet regime and after the disintegration of the USSR. Power politics of clan has appeared on the surface full-fledgedly, especially in Tajikistan, which seems associated with acquisition of control of the administrative apparatus to mobilise wealth and influence. The President of Tajikistan, E. Rakhmonov, is accused of upsetting the previous balance of clan representation in administrative structure. "The election intensified the "Kulyabization" of the ruling regime; a process that has begun after the victory of the People's Front. People from Rakhmonov's home province control 13 of the 18 ministeries and natives of Kulyab hold leadership posts in the most of province."²

The other contestants are the Khodzhent (Leninabad) clan of the north, and the Badakhshanis of the east. There are other groups also

² The Current Digest of the Post Soviet Press, Vol.XLVIII, No.20 (1996), p.20.

which shift their position according to the shift in power. In Kyrgyzstan, the tension between the north and the south is so strong that the danger of position has also been envisioned by many Kyrgyzs.³ There is a rivalry of Horde in Kazakhstan. In Uzbekistan a fierce clan rivalry exists between traditional bases of Ferghana, Samarkand and Tashkent. And it has been cause of rotation of power among these. But, President, Islam Karimov is able to secure the support of all the groups. In Tarkmenistan the Ahal-Tekke tribe controls the seat of power. Moreover, the Soviet authority was well aware of the significance of the clan network in politics. "No individual could attain high office solely on his own merit, who required the support of powerful network that would, on one hand, neutralise regional opposition (especially that was provided by the clan base of a rival candidate) and, on the other hand, facilitate his work in such a way as to make his administration a conspicuous success," (Shirin Akiner, 1996, p.274). Thus, a candidate with stronger clan support enjoyed Moscow's blessings because he was able to function more smoothly. In these republics, usually, the post of first secretary was given to a member of the titular nationality. So, a kind of titular ethnic domination was prevalent there. When in 1986, the CPSU appointed a non-native or more precisely a Russian as the first Secretary of the

³ "The North-South Axis : What is Fettering it?", Kyrgyzstan Chronicle, No.4, Dec. 21, 1993.

Communist Party in Kazakhstan. It provoked unprecedented ethnic violence in Alma exception to this nationalities policies appeared under the way to eradicate corruption in Kazakhstan by Moscow: the case G. Kolbin, a Russian as the first secretary of the Aty.

Political Aspects

After the disintegration of the USSR, the focus of political power shifted to the newly emerged Republics. Like in other republics of the erstwhile Soviet Union, in Central Asia, the political power shifted to the group of people who were entrenched in the Soviet system and, more than this were also product of the Soviet system, such as the present Presidents : Nazarbaev in Kazakhstan; R. Nabiyev in Tajikistan; etc. Except the Presidents of Tajikistan, the President of the rest of Central Asian republics are elected unopposed. Moreover, a personality cult based political power elite has emerged or is being promoted by the state which controls all the mean of mass communication. Role of clan and ethnicity in politics is on the upswing. For instance, Kazakhstan has given a call to all the Kazakhs living abroad to return with a view to increase their percentage in the Kazakhstan population which is at present evenly balanced between the Kazakhs and the Russians. Other republics are, directly or indirectly, creating conditions under which non-relatives would find it

difficult to stay on. For example, the land allocation policies of Kyrgyzs, curtailment of Broadcasts of Radio and TV Programs from Russia and Broadcasting from Turkey has been increased in Uzbekistan.⁴ Such policies have affected the affective attitude and responses of non-eponymous population resulting into mass exodus. A survey – 1994–95⁵ financially supported by Mac Arthur foundation and the R.S.F. Migration Service, indicated out that 75 percent of the people polled want to leave Uzbekistan in comparison to 59% in 1992; in Kazakhstan, 66% want to leave; and in Kyrgyzstan – 62%. According to its estimates in next five years, Russia can expect that 39% of Uzbekistan's non-eponymous population, 16% of Kazakhstan and 12% of Kyrgyzstan would migrate. According to the survey, there is a strong possibility that the region may plunge into a state of instability resulting from the ethnic conflict.

Most observers of Central Asia have observed, virtually no independent opposition parties in Central Asia. Moreover, a concept of democratic opposition doesn't exist in popular consciousness, such as all the channels of mass communication are controlled by government.

⁴ The Current Digest of the Post Soviet Press, Vol.XLVIII, No.34, p.23, 1996.

⁵ The Current Digest of the Post Soviet Press, Vol.XLVIII, No.28, pp.19–20, 1996.

Thus, these states have little or no space for public debate. The process of democratisation of institutions has not yet taken off. Though, all the heads of the Republics are elected, yet a lot of questions are raised on the validity of election and use of state machinery by ruling parties. Consequently, serious objections were raised by the opposition on the election of E. Rakhmonov as President of Tajikistan. Any demand through mass gathering or agitation is restricted. Consolidation of judicial institutions is under-endowed. Constitutional development in Central Asian Republics has been very slow.⁶ Suddenly Kazakhstan's constitutional court was suspended away with the provision of filing complaints against infringement of the citizen's rights. But in the new draft, the constitutional council has provision of a Presidential decree which empowers the Prosecutor's office to deal with the civil rights of the citizens.⁷

Economic Aspects

The Central Asian Republics carry the burden of Soviet Legacy in lop sided development of their economies. There was adopted the Socialist mode of production. Private ownership was abolished and all

⁶ The Current Digest of the Post Soviet Press, Vol.XLIV, No.19 (1992), on What Future to Embattled Tajikistan?

⁷ The Current Digest of the Post Soviet Press, Vol.XLVIII, No.9 (1996), p.17.

property was socialised and the economy was co-ordinated through the Central Plan, Gosplan, that was highly centralised and imbedded in administrative command system. In this framework they started rapid industrialisation for economic development. Central Asia was assigned to provide the raw material (especially, cotton and minerals). It turned Central Asia into exporter of primary products and importer of the processed items which generated lopsided structure of development. Moreover, the Soviet regime hardly favoured ecologically viable investment. Consequently, construction of big projects, switching over intensive agricultural activities in pastoral land and establishment of long oil and gas pipelines appeared on the surface. Here, considering the long thermal period, fertile soil and large water resources of the rivers, they brought more and more area under cotton cultivation and extended it through introduction of irrigation. Due to this process, “the ‘thirsty god’ of cotton was progressively to swallow up the Aral sea and the ecological effect of specialisation turned the ‘white gold’ of cotton into a white death as shown by the figures for infant mortality” (B. Fowkes, 1997)⁸ and rampant spread of diseases in region. Uzbekistan became victim of the mono-culture. During this period the

⁸ Ben Fowkes (1997), “The Distintegration of the Soviet Union : A Study in the Rise and Triumph of Nationalism”, (London : Macmillan Press Ltd., 1997), p.127.

economic independence was reduced to the extent that Central Asia produced 90 percent of Soviet Cotton output but 93 percent of the production was centred on and processed outside the region. It turned Central Asia into net importer of manufactured goods and food articles. It dismantled the basic structure of Central Asian economy. The adoption of such policies was meant to increase Moscow's grip on the economy of Central Asia (peripheral areas) by making it objectly dependent on ASFSR. Even when the Central Asians, however, loyalties demanded diversification of their economy, Moscow turned it down. For instance the first secretary of Tajikistan, Q.M. Mahhmov, (1989) came up with demand of establishment of a cotton-processing plant, it was turned down by the centre. Ben Fowkes (1997) has brought out that in the 1980s, in Uzbekistan, a considerable number of unemployed had been noticed (in 1986 there were 234,000 of them, 77 percent in the countryside). Similar trends were also visible in other parts of Central Asia. According to Shirin Akiner (1996) – "Central Asia suffered in full measure from the common shortcomings of the Soviet system : uneven development, inefficiency, inadequate technical maintenance, environmentally harmful technologies, irrational and unsustainable use of resources, lack of familiarity with international institutions, no background in western style financial management, and few of the constituent elements of market economy.'

Whatever infrastructure was laid down in the field of health sector, communication and storage facilities, were dismantled due to lack of maintenance and inefficient management. It has been highlighted efficiently by P.M. Carley (1989) –

“infant mortality was growing fast tragically in some part of Uzbekistan, ... the state of health has really reached to catastrophic condition, ... paucity of nutritious food due leakages in storage capacities, ... and consumption of fish was 21 times, milk per head 6 times and meat per head 12 times less than what was at country levels.”

This kind of neglect of these states led to low living standards and low per capita income in comparison to other states of the Soviet regime, for example, in “Turmenistan national income was 980 roubles and in Latvia 7200 roubles, in the late 1980s..

After the independence, all Central Asian republics have shown commitment to the principles of a free-market economy. Though these states are passing through widespread corruption, embezzlement, speculation and other malpractices, yet these states are heading towards liberalisation of economy. They are cautiously introducing changes in this transitional phase and trying to implement legal safeguards. However, these states lack entrepreneurial skills, management skills, efficient financial institutions and effective market system. Moreover, these states have inherited a dismantled economy with ruptured production linkages. To a large extent, it is the result of

lopesided development of economy during the Soviet regime; and highly centralised administrative system which kept the people away from any participatory involvement in decision-making activities that led to deficiency in managerial skill. It resulted in a high degree of paucity of consumer goods in the market. In spite of many monetary and budgetary efforts, the prices of consumer goods shot up and the money went on depreciating giving way to monetary speculation in place of direct investment. The rate of interest is exorbitant and highly fluctuating. All these factors have led to negative growth rate. Morth de Melo and A. Gelp (1996) have put all Central Asian countries into a category of lagging countries. Average G.D.P. growth in 1994-95 varied from -7.5 to -18.5; for Kyrghys Republic (-7.5), Turkmenistan (-12.5), and the rest three (-18.5 each).⁹ They also highlight the catastrophic situation of rate of inflation which is considered root cause of sluggish state of economy. It chews up savings of the economy which is considered one of major components to accelerate growth of an economy and that economy gets plunged into vicious circle of poverty. According to Morth de Melo and A. Gelp (1996), Central Asia, as a whole has been experiencing annual

⁹ Morth de Melo and Aleb Glep, "A Comparative Analysis of Twenty Eight Transition Economies in Europe and Asia", Post Soviet Geography & Economics, No.5, 1996, pp.265-286.

inflation rate about 1000+ between 1992–95. And its highly fluctuating trends in rate of inflation are sufficient enough to boost up speculation, malpractices rupturing the efficiency of financial institutions. In this situation of uncertainty and high rate of depreciation, government has taken severe measures such as punitive tax reforms. “Punitive tax reforms have a huge burden on private enterprises, forcing even the most honest entrepreneurs to cheat in order to survive”, Shirin Akiner (1996).¹⁰ She further, brings out that introduction of national currencies has also aggravated inflationary pressures. These trends go against conducive climate for successful domestic economic reform.

In this state of economic instability, Central Asian republics are facing acute need of international aid to restructure and to adjust the ruptured state of economies. But, there are many major impediments : lack of meaningful dialogue between donors and recipients, less understanding of the socio-cultural scenerio by donors, lack of understanding of terms of loans and its long term implications, etc. Some experts in this field have observed overhastling on the part of donors and recipients, over-estimation or under-estimation of

¹⁰ Shirin Akiner (1996) cites an articel by Zh. Kulambetov, Slovo Kyrghystan, 13 April 1994, p.3. According to him some 80% of the profits of commèrical enterprises are taken in tax.

projects' expenses, lack of co-ordination in different sectors over the use of limited resources. Some Republics (like as Kyrghystan has received so many loans and credits that its external debt has reached equivalent to 100% of its GNP) are taking loans without assessing the long term implications. Of course, the donors are propagating their ideologies of market oriented reforms, political pluralism and freedom of speech and, moreover, a safe space for their investments and MNC's. Now the Central Asian intelligentsia is beginning to look at this process as new form of neo-colonial subjugation, particularly after the murky affair of a Canadian firm in Kyrghys gold deposits and the secret agreement to establish a US/NATO base in Kyrghyzistan.¹¹ After the independence, there was a lot of speculation that Central Asian republics would follow either the Iranian model of Islmaic fundamentalism or the Turkish model of western style democracy. But limited aid capacity of these countries (Iran and Turkey) proved a major obstacle in the way to incarnate any of the models. Of course, Central Asian states keep cordial relationship with both the countries. It is the geostrategic location of Central Asia which brings these two countries into main domain of the foreign policy. There are other

¹¹ Fowkes, Ben, The Disintegration of the Soviet Union : A Study in the Rise and Triumph of Nationalism, (London : MacMillan Press Ltd., 1997), pp.20-179.

countries such as China (China's proximity and eco-military capacity ensures its important role in the region as it has offered better transport linkages and relaxed border control), Pakistan, Russia and India are also looking towards Central Asia for eco-political co-operation. As Central Asia is integrated into various trade linkages and different eco-political alliances, the external influence over domestic matters will increase. In the proximity, cross-border instability and its people's cultural and religious continuity also subject it to external influences. Visualising the increasing competition for different political alliances, ethnic-pluralism, economic weakness and underendowed political institutions, Shams-ud-Din (1995)¹² has observed that Central Asian republics can lead to divergent paths depending on geographic accessibility and can be caught in economic unrest and intra-regional tensions.

Demographic Aspects

Before correlating environmental scarcity and security with underendowed socio-political institutions of Central Asian republics, here it becomes necessary to scan different aspects of population dynamics and its pressure on natural resources and socio-political

¹² Shams-ud-Din, "Geopolitics of Central Asia", in Shams-ud-Din (Ed.), Perspectives on the Emerging World Order, (Gyan Publishing House, New Delhi, 1995).

environment. In these republics, the primary sector (especially agricultural and forestry) which contributes nearly 40 percent of GNP, except in Kazakhstan, where it comprises of 26 percent. Though, generally, population density in this region is low,¹³ yet nutritional density is considerably high in this region, for example, in Kazakhstan, 42 persons/km²; in Kyrgyzstan, 343 persons/km²; in Tajikistan, 716 persons/km²; in Turkmenistan, 278 persons/km² and in Uzbekistan, 322 persons/km². The population is highly concentrated in the river valleys. It varies from 300 to 500 persons or more per square km. An account of the recent conflicts shows that all these conflicts were confined to the river valleys such as Farghana Valley (Kyrgyzstan), parts of Samarkand and Bukhara Provinces (Zeravshan Valley), Lsfara–Batken conflict, etc. This situation has become very explosive one on account of decreasing after the independence when population is compelled to switch over to agricultural activities.

Central Asia republics are experiencing high population growth rates : in Kyrgyzstan, 1.5 percent; in Tajikistan, 2.6 percent, in Uzbekistan, 2.08 percent, in Turkmanistan, 1.97 percent and in Kazakhstan 0.62. They are still experiencing the “expanding stage” of

¹³ An analytic study by ... in Kazakhstan, 6.3 persons/km²; in Kyrgyzstan, 24 persons/km²; in Tajikistan, 43 persons/km²; in Turkmenistan, 8.5 persons/km² and in Uzbekistan, 51.6 persons/km².

demographic transition, with high birth rate and low death rate. There is hardly any place for contraceptive devices in socio-cultural sphere of this region. "It is estimated that if present trends continue, the population of Uzbekistan and Turkmenistan will double in 25 years, Kazakhstan in 35 years, Kyrgyzstan in 30 years; were it not for the revages of civil war, Tajikistan's population would probably double in 22 years". Shirin Akiner (1996) has highlighted that, in Uzbekistan, rural density has been increasing over the time because of two factors: firstly due to natural growth rate; and secondly, the social structure, like large family structure which is about 5.5 persons per family and the cultural tradition which encourages the young people to stay with parents. These factors have resulted in a steady increase in rural population from 57.7% in 1984 to 61% in Jan. 1994. These factors are also playing considerable role in population growth rate of the rest of the republics. Lawrence R. Robertson (1996) says¹⁴ that "different fertility and mortality rates are likely to have far more substantial effects in Central Asia and Kazakhstan, where Slavs and Central Asian peoples differ substantially in components of natural population growth." Its impact is clearly visible in Kazakhstan where population

¹⁴ Lawrence R. Robertson, "Ethnic Composition of migration in the former Soviet Union," Post-Soviet Geography and Economics, Vol.37, No.2, 1996, pp.113-128.

growth rate is comparatively low. High infant mortality rate indicates a weak state of health facilities, deteriorated state of the environment and under-endowed socio-economic institutions to cope up with the problem. There exists a positive correlation between infant mortality and population growth rate.

If we look at the movements of population in these republics, we find state of social unrest. Highlighting the migration trends in all the republics of the former USSR, L.R. Robertson (1996) bring out that net migration to Russia was almost 1,35,000 from Uzbekistan and 3,34,500 from Kazakhstan in 1994. Similar trends are also present in other republics. These trends seem set to continue in future also. It has brought considerable change in the ethnic composition of population of the republics. What Central Asia is losing is the educated and well trained personnel which would have contributed a lot to the economy. Titular populations residing in other republics and countries have been migrating or allured to migrate to their respective homelands. In reality, this kind of homogenisation of population in the respective republics seems benefiting less in this "clan rivalry ridden"¹⁵ and ethnically sensitive society than increasing social unrest and instability.

¹⁵ Shirin Akiner, 1996, pp.272-73.

STATE OF ENVIRONMENTAL SCARCITY AND CONFLICTS IN CENTRAL ASIA

Here, it will be relevant to analyse the various conflicts happened in Central Asia in the recent past (particularly in the 1980s and 1990s). On one hand, it would help to understand different components and parties involved in these conflicts, and on the second hand, an analytic study of causes and historicity of the conflicts would facilitate to have comprehensive understanding of the state of environmental scarcity and its multi-dimensional relation with the security in Central Asia.

Firstly, a major conflict took place between the Meskhetian Turks and the Uzbeks in the Ferghana Valley in 1989. In these disturbances, nearly 100 persons (mostly, the Meskhetian Turks) were killed and over 1000 persons were injured. This conflict was started in a small town of Kuvasai and later on spread to the larger towns of Margilan, Ferghana, Kokand and Namangan. Besides the killings, the burning of the homes and a consternation among the Meskhetian population followed which within days started evacuating to the other part of the country (Yaacov Ro'i, 1991).¹⁶ The Meskhetian Turks were one of the nationalities deported from the Caucasus to Central Asia by

¹⁶ Yaacov, Ro'i, "Central Asian Riots and Disturbances, 1989-90 : Causes and Context", Central Asian Survey, Vol.10(3), 1991, pp.21-54.

Stalin during the World War-II. Their number is 4,00,000, mostly in Uzbekistan, although dispersed in Kyrgyzia, Kazakhstan and some parts of the Caucasus. Throwing light on the causes of conflicts, Yaacov Ro'i (1991) has brought out that though there were some immediate versions : demands of exorbitant price for some strawberries by the Meskhetian; some Uzbeks were insulted in a restaurant run by the Meskhetian; and a plethora of rumors due to lack of information such as the Meskhatian insulted an old Uzbek lady; yet the real causes seem imbedded in socio-eco-political set up.

The authorities¹⁷ and the Uzbek republican press sought to demonstrate that the disturbances were criminal and highly organised : they (the parties involved in the disturbances) were possessing Kalashnikov automatic rifles as well as other fire arms, gasoline and all transportational facilities, and their targets were well defined. There was no doubt that the disturbances were an expression of a nationalist mood among national population. As Timur Pulatov (Uzbek writer) indicated, the situation was brewing interethnic friction such as atmosphere was fanned by the stories of Meshketions getting the best posts in co-operatives and best plot for housing. It was most

¹⁷ The MVD (Ministry of Interior) of Uzbekistan : The Commander of the MVD's internal troops, Col. Gen. Lurill Shatalin. Two politburo members, P.M. Nikolai Ryzhkov and CPSU Committee Secretary, V. Chebrikov who came to investigate in the Fergana Valley.

densely populated area with high rate of unemployment. Yaacov Roi (1991) has highlighted that this community (the Meshketians) was highly neglected one (“a minority without rights”, “second class citizens”) but somehow some of them managed by “skill and ability”, and attained privileged economic positions. The Meskhetian Turks had anticipated possible tragedy and had sensed the negative feelings since some years that they were eating opportunities of indigenous populations so they asked for protection from authorities. The Uzbeks were feeling marginalised economically. The region was passing through a population pressure which had repercussion on such as unemployment and socio-economic inequality was prevalent there. Yaacov Ro'i points out citing one republican of Kosmosmol Organ that “the frustration of poverty and the humiliation of social inequality” was one of major reasons of the conflict. Politburo member; P.M. Nikolai Ryshkov pointed out that we have discussed the republic's socio-economic problems in the context of the recent events. The question of ‘economic marginalisations’ comes into fray here. Citing a report of Moskovskie Novosti, Yaacov Ro'i (1991) has pointed out that the matter was oversimplified by the authorities attributing it to hooligans and conspiracies of “corrupt circles”. But in reality, other than the Meskhetian minority, Russian, Jews, Tajiks and Koreans were receiving threats.

Some other accidents of conflicts took place in Askhabad and Nebit-Dag in Turkmenia in May, in Novyi-Uzen and other towns in Western Kazakhstan in June, and in Isara region in Tajikistan in July, 1989. In these conflicts, which appeared interethnic in colour but “investigations attributed rather to socio-economic causes for which interethnic animosities provided a pretext”, (Yaacov Ro’i, 1991). These conflicts had been anticipated on nationalist grounds. In the conflicts of Tajikistan, Armenians have been massacred who were blamed of getting priority in housing. This problem was also anticipated by the first secretary, K. Makhamov who described housing as the republic’s major problem. Moreover, an earthquake which hit the area, Gissar Rasson, aggravated this problem in which people were living in temporary housing. The demonstrators also asserted their demands of making Tadzik as the state language. In these conflicts, a voice against the deteriorating health of environment was heard such as demand of closing the polluting alluminium factory and closing a pork-processing plant in Dushanbe. A vociferous voice was also raised “Tajikistan for the Tadzik!” (Yaacov Ro’i, 1991) and a demand for control of Samarkand and Bukhara (historical hearth of Tadzik power and culture) was also on the cards.

In Nebit-Dag and Novyi-Uzen of the Ferghana Valley, the causes

of the conflicts were also attributed to lack of housing, jobs, the low living standard and the slow pace of perestroika and change.

The Tadzik Komsomol press also tried to highlight that the disturbance would be seen as politically motivated when a group of politicians (élites) might have hidden motive of overthrowing of the republican government. This shows the matter of power conflicts between the elites. Of course, these conflicts seem highly imbedded in the repercussions of population pressure, inequality in socio-economic aspects and economical marginalisation of the local people. Interethnic hostilities have just provided out the catalyst. In all these conflicts, as the authorities (such as the commander of the All-Union MVD internal troops, Co. Gen. Shatalin) and the press, the replies (such as Paravada Vostoka in the case of the Meshkhetian versus Uzbeks) have pointed out that the conflicts were propagated and implanted by rumors and unscrupulous intoxication such as photographs and falsified agenda. It affected the inefficiency of the government agencies to organise well and their preparedness, skill; and a great lacuna on the behalf of communication facilities and means of transportation. Considering the prevalent socio-economic inequalities, unemployment and a state of deteriorated environment, it can be concluded that a situation of underendowed socio-economic institution prevails.

In the Osh valley, a confrontation took place between the Kirgiz and Uzbek population in the Kirgiz Republic in June, 1990. It escalated when Kirgiz young people continued to occupy one side of the ill-starred field. Basically, this problem had long been coming to a head. "In fast few years quite a few new enterprises and organisations have (had) opened in Osh."¹⁸ This caused influx of manpower in the urban area from the rural area. There were thousands of people waiting for housing. This situation got intensified when, inspite of a state of emergency, clashes took place and became complicated by the coming of young Kirgiz on horseback from nearby districts to help their brothers.¹⁹ The local authorities lost their control over the situation, exchange of firing took place between both the communities and on 6 June, 1990 the number of death had reached 35. Despite all attempts to localise the matter, it spread to other communities near Osh and it turned in 10 hot spots. The situation intensified to much that a state of emergency had to be declared. The sitaution had aggravated and it was propagated to the extent that thousand of people of both communities moved towards the disputed area. "It had been reported that 15000 Uzbeks approached Kirgizia's borders from the direction of Andizan.

¹⁸ The Current Digest of the Soviet Press, Vol.XLII, No.23, July 11, 1990.

¹⁹ The Current Digest of the Soviet Press, Vol.XLII, No.23, July 11, 1990, p.2.

They were demanding surity from the internal troops to protect the Uzbeks not only the Kirgizs.”²⁰ However, the concerned authorities were on the red alert and were taking all the measures to prevent conflicts from spreading to the neighbouring republics – Tajikistan and Uzbekistan. In these conflicts 195 people died and thousands of persons were injured.

How did all this happen? Basically, it started with an arbitrary attempt of the Kirgizs to take over the land for housing in Frunze (Bishkek). It was an attempt to improve the living conditions. The authorities gave in and handed over the land. But it was an attempt at the cost of other sections of the population. The act of the occupation of the land was a result of a frustration out of low living condition as “some people of the republic live in harsher and more difficult places.” The state of the environment was deteriorating because of inharmonious nature of development such as the diversion the rivers water, excessive use of chemicals and pesticides, lack of water supply to the urban centres and dismantled state of the installed capacity of storage facilities and health centres such as nearly 150000 women gave birth in most dreadful conditions, escalating already enormous infant–mortality. It created a sense of distrust and disrespect for the

²⁰ The Current Digest of the Soviet Press, Vol. XLII, No.23, 1990, p.4.

republican machinery and law which disrupted the system. The Osh Province newspaper, "Leniniuli", blamed the Soviet machinery for not finding a solution of allocating housing. In the Osh Province, there were 66 percent Kirgizs and 26 percent Uzbeks out of the total population. And of the 200000 people living in Osh itself, 44 percent are Uzbeks – (a report of internal administration). But, according to V.G. Gusev, Uzbek Republic First Deputy Minister of Internal Affairs, one finds almost no Uzbeks among the leadership of provinces, districts and farms. This violation of social justice... and was quite possible to led to discontent, tension and confrontation."²¹ Here, the aggrieved Uzbeks demanded an autonomous region which has support from the other side the border. It may be cause for great tension in this region in coming days, firstly between these communities, then between the two republics. High population growth rate and its associated consequences such as unemployment and high pressure on natural resources, especially in the condition of environmental strains (distorted soil chemistry, the excessive diversion of water of the rivers, excessive use of pesticides and chemicals and spread of epidemic in the region) and increasing economic inequality in the condiiton of underendowed socio-political institutions are bound to

²¹ The Current Digest of the Soviet Press, Vol.25, No.25, 1990, p.16.

escalate social tension and unrest. And, if accompanied by ethnic-pluralism and clan rivalry, it leads to direct conflicts.

The cities of Bukhara and Samarkand are very ancient centres of Tadjik culture. According to census data for 1920, the Uzbeks comprised of 4 percent of the cities total population while the Tadjiks, 75 percent. But due to the arbitrary delimitation of the nationalities by the Soviet authority, Bukhara and Samarkand went to Uzbekistan. So, a large part of Tajikistan's present territory has historically been a peripheral zone of Tadjik culture.²² A correspondent said in this context that they were left with only these boxes to live in. Though a section of the Tadjik population in the cities supported their present position, yet Uktam Bekmukhamedov, leader of the radical wing of the Samarkand society was arrested and Dzhamol Mirsaidov, a professor of Samarkand University was ousted from his post, for the cause of Tadjiks. Bukhara and Samarkand are not the only cities where the Tadjiks live. According to a correspondent, the Samarkand society estimates that there are about 3.5 million Tadjiks in Uzbekistan, that is, about 22% of the total population. They claim that they live essentially without rights. These feelings, and a state of injustice, breach the filament of tranquility between the communities which

²² The Current Digest of the Soviet Press, Vol.XLV, No.1, 1993, p.7.

would lead to tension between the republics. "Today, despite the outward stability of Tadjik – Uzbek relations, the likelihood of a conflict between the two ancient Central Asian peoples has grown sharply."²³

Since the beginning of the first half of the year 1992, Tajikistan has been passing through a state of civil war. Basically, it is a power struggle between two groups : first are the "losers" who could make out their way into the official structure and were wrapped in the garb of "democratic" status, also known as new Bolsheviks; and second, were those Bolsheviks who understood the situation quickly that Tadjik society is basically a peasant community, a clan based one, there was no need to bear someone's second party cloths. The later group possessed the power. The oppositions clinging to democratic status in which Tadjiks are not "trained, and moreover they have very comical alliances with religious forces, former (the present) communists and seeker of position in the state apparatus. Thus, two elite groups were fighting each other for power in Tajikistan. It is a clan based society which lacks not only skills of democratic culture but also a tradition of any sort of statehood.²⁴ The President, R.

²³ The Current Digest of the Soviet Press, Vol.XLV, No.1, 1993.

²⁴ The Current Digest of the Post Soviet Press, Vol.XLIV, No.19, 1992, p.6.

Nabiyev won the election with the help of a considerable section of the Tadziks and other nationalities of the state.

The situation aggregate to the extent that the Presidents Nabiyev was not allowed to speak on the radio and was compelled to resign. The state machinery failed totally and once renowned border for its impregnability became porous to the extent that the rival Tajik factors gets arms and drugs smuggled across the boarder. "This gear alone, 603 border violaters were arrested and, according to conservative officials statistics, 424 were able to outsmart the border guards.... frequently smuggling is carried on almost openly in the Kalaikhum sector of the Khorang border."²⁵ These types of activities get a supporting hand from low wages of workers and security guard in this highly dismantled socio-political institutions. The opposition is getting help (arms and ideology) from outside the state. It becomes clear when Emomali Rakhmonov (President of the Republic) bursts out, "show me the Islamic states where these terrorists are being trained. They are trained in Iran, Pakistan and Afganistan specially in order to terrorise the Tadzik people."²⁶ The opposition, especially the Islamic Revival Party, is backed by religious clergy and religious agenda which seems embedded into religious fundamentalism. It has

²⁵ The Current Digest of the Post Soviet Press, Vol.XLIV, No.33, 1992, p.12.

²⁶ The Current Digest of the Soviet Press, Vol.XLVIII, No.5, 1996, p.15.

been matter of great concern not only the people can decide what should be state like.”²⁷ Considering the situation quite grim, the President of Uzbekistan, Karhisov sent troops to Tajikistan to put down the fundamentalist Islam Karmov’s action was based on “fears that victory of the “democrats” and followers of idea of reviving Islam in Tajikistan could inspire several million Tadziks in Uzbekistan, as well as strengthen the Islamic movement in the Ferghana valley.”²⁸ Clan rivalry has played considerable role in this political scenario of Tajikistan. The Kulyabs clan of Leninabad Province dominates in the administrative structure. The President is blamed for the “Kulyabization” of the administrative apparatus, out of 18 ministers, 13 ministers belong to Rakhinonov’s home and the Kulyabs have taken over the forced migrants’ apartments and property.²⁹

There were two main groups : the opposition and the people in the power in the fray. But, here, as the question of reconciliation appeared on the surface with the proposal of establishment of a commission to be represented at parity, the opposition demanded that 20% of seats should be allotted to the “third force” – the National Revival of Tajikistan (near to the opposition). On January 10, 1997

²⁷ The Current Digest of the Soviet Press, Vol.XLVN, No.16, 1997, p.8.

²⁸ The Current Digest of the Soviet Press, Vol.XLV, No.3, 1993, p.12.

²⁹ The Current Digest of the Soviet Press, Vol.XLVIII, No.20, 1996.

UN representative proposed a compromise to the Tadziks delegations in which a commission should have 17 members; in which 47% of the government, 27% the opposition at 29% and the rest should be left for the neutral representation.

The civil war ruined social and economic institutions in Tajikistan. The economy has virtually collapsed not just industry but agriculture also, the Tadziks' Traditional occupation.³⁰ They are experiencing a mass exodus in demographic dynamics such as the mass emigration, high infant mortality rate, high population growth rate, etc. The society is facing a high rate of crimes, drug trafficking, trafficking in illicit arms and criminalisation of power. On the other hand, a highly deteriorated state of the environment and pervasiveness of epidemic diseases such as jaundice, etc; and a state of inefficient organisation and management of the resource is leading to social unrest and tension in Tajikistan.

Relationship Between Environmental Scarcity and Security in Central Asian Republics

Central Asia is passing through an ecological trauma : the Aral Basin is desiccating and severity in the climate has taken place, changing different attributes of the ecosystems.³¹ The excessive

³⁰ The Current Digest of the Soviet Press, Vol.XLVIII, No.33, 1996, p.13.

³¹ The Central Asian Post, December 12, 1996, No.9, and David Smith, 1995.

diversion of water of the rivers for the monocropping pattern has led to salinisation (in the late 1960's, 20–25 million tonnes of salt was found accumulated in the Darya and Syr Darya basin each year), soil erosion and desiccation of the Aral Basin from where wind carries tonnes of salts thousands of kms. away (famously known as the “Dry Tears of the Aral”). These are bringing “radical changes to the atmosphere, water, industry and economy, and have understandably brought havoc in the lives of thousands of inhabitants of the Aral Basin.³² The soil chemistry and its bio–chemical cycle is highly distorted.

On the demographic front, Central Asian republics are experiencing a situation of population explosion in which rate of doubling of the population varies from 25 year in case of Uzbekistan to 35 years in case of Kazakhstan. The nutritional density is 42, 343, 716, 278 and 322 in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, respectively. Availability of the irrigated land is 0.29, 0.20 and 0.33 hectare per person in Kyrgyzstan, Uzbekistan and Turkmenistan, respectively. Moreover, these republics are passing through a mass exodus which is the *main indicator of instability in socio–eco–political institutions*.

On the economic front, all the republics are facing negative

³² The Central Asian Post, December 12, 1996, No.9.

production growth rate with very high rate of inflation. Economic institutions are too mature to take any substantive measure. Thus, corruption and malpractices are growing under the régime of high taxation. In this way of liberalisation and globalisation, they are getting external debt and investment without any proper impact assessment analysis and realisation of area to invest (S. Amin, 1996; and Ben Fowkes, 1997). More-over, agriculture is the basis of Central Asian economy. In 1988, for instance, 50% of work force in Uzbekistan, 55% in Tajikistan, 44.6% in Kyrgyzstan and 54% in Turkmenistan was engaged in agriculture. It is on the increase after the independence. Though economic-inequality started during the Soviet regime with the change in state policies in 1980s, it was basically result of the lack of co-ordination between input-providing agencies and the processing units, inefficient management and gross ignorance of the peripheral states (such as Central Asian States). Since independence, also economic inequality is rising high in the new wave of restructuring of the eco-political institutions. *It is reflection of the under-endowed economic institutions.*

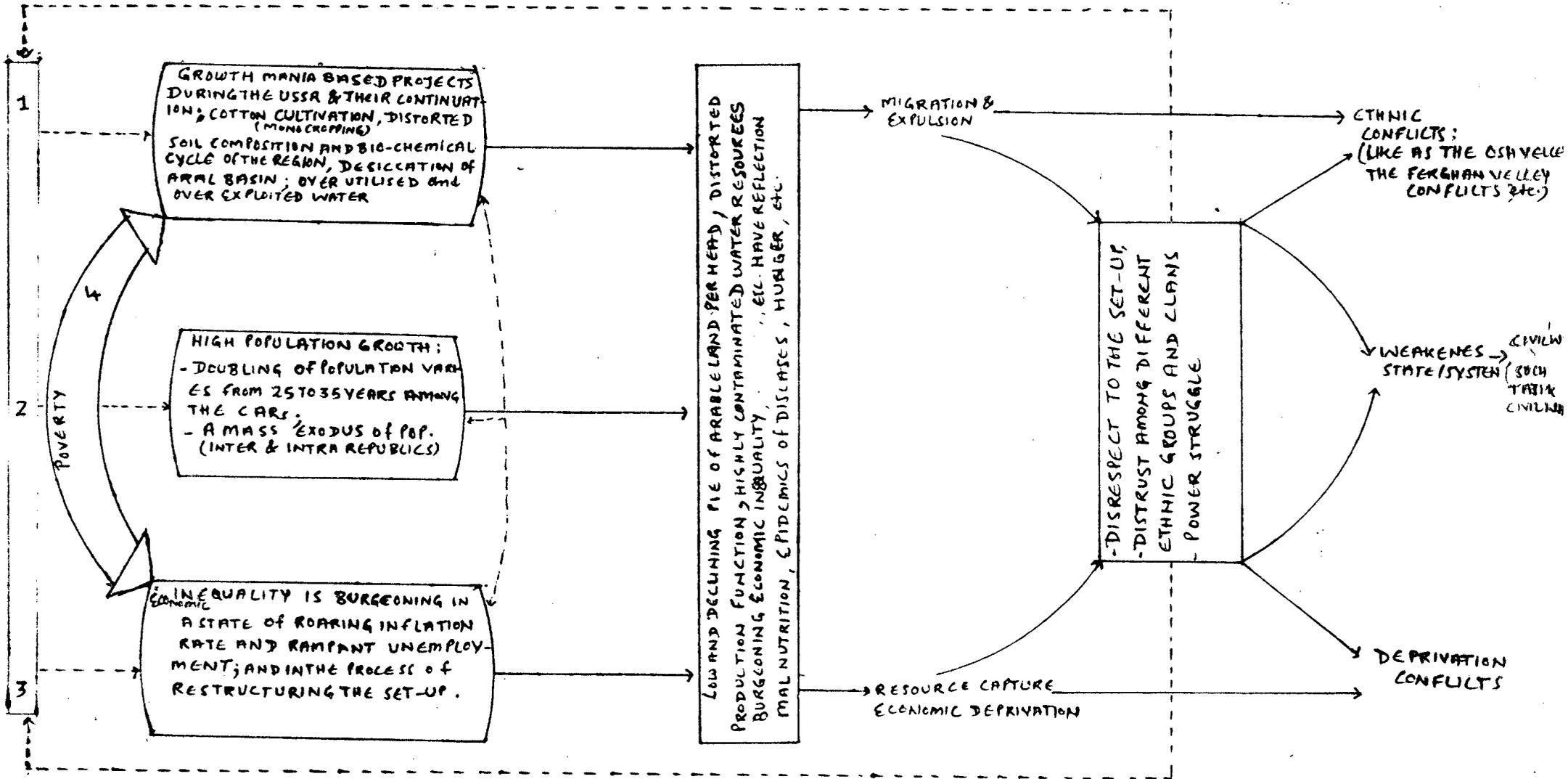
These republics did not fight for independence for long time which would have made them feel the nationalist sentiments. The nationalist sentiments which were felt during the time of independence

turns out to be temporary and superficial, especially in a multi-ethnic society or in a class based structure. As Buzan (1991)³³ highlights that this type of the nationalist sentiments are negative to group unity and “bonds of xenophobia which disintegrate once the euphoria of independence gets subsided. In the multi ethnicity ridden society” any attempt to create a situation of cultural dominance are major factors in the emergence of conflicts based on ethnicity”.³⁴ In the case of Central Asian republics, on one hand, they are adopting (introducing) a system which transfers almost all the power in the hand of an ethnic group; on the other hand, the power structure is highly engrossed the class rivalry. In these conditions, the groups other than the one that controls power tries to make its dominance over other. Over a period of time, it leads to a sense of disrespect to the structure. This situation gets complicated when dominated ethnic groups are found in considerable number of and state of dominance in power structure in adjoining countries. Then, it can create a breach in the relationship between the concerned states. If the situation gets prolonged and intensified it may turn into international dispute. For the first case, we

³³ Buzan, B, People, States and Fear: An Agenda for International Security Studies in the Post Cold War Era, (London: Harvester Wheatsheaf, 1991).

³⁴ Luc Van de Goor (ed.); “Between Development and Destruction: An enquiry into the cause of conflict in Post-Colonial states (London: Macmillan Press Limited 1996) p.15.

ENVIRONMENTAL SCARCITY AND SECURITY IN CENTRAL ASIA



can take the Ferghana region and the Osh Valley's conflicts and for the later case, the Turkmenistan's civil war suit. As Weiner (1987) points out where a single ethnic group has taken control over the state there has been far less 'national building' than many analyst had expected and hoped for the process of state building. Here, the multiethnic characteristic of the society is providing a pretext. Basically, these conflicts are related to the state of environmental scarcity which results into processes of resource capture and economic deprivation of a group of individuals.

Central Asian is passing through ecological trauma and state of health of people is quite deteriorated such as the pervasiveness of epidemic of jaundice and influenza. Central Asia republics are passing through a state of high population growth rate, where most population is confined to about high 10 percent of the total area, in the valleys, inserting high nutritional density. It is accompanied by a deteriorated state of environment, highly disturbed soil chemistry and its bio-chemical cycles and highly contaminated and exclusively diverted (misutilised) water resources. This , as a whole, reflects into pervasiveness of epidemics of influenza and jaundice, etc; and a high infant mortality rate. In these conditions, people get aggrieved at the existing set up. And when it is interspersed by multi-ethnic and class

embedded structure, a sense of distrust and disrespect in between or among them arises which leads to social unrest and instability. Central Asian republics are experiencing negative economic growth rates, roaring inflation rate and burgeoning unemployment, on one hand, and most of the presidents of the republics are working with dictators and the people are not well versed in democratic tradition. Whenever, a state of social unrest and instability is accompanied by under-endowed eco-political institutions, it causes conflict such as the Turkmenistan civil war, the Ferghana valley and the Osh valley conflicts. The situation gets complicated when the adjoining countries are passing through armed conflict such as the Afghan civil war, and the border is porous.

Peter Gleick (1993)³⁵ and David Smith (1995)³⁶ have pointed out, illustrating with many instances, that the common resources, especially water, poses great danger to international security. It has been a great weapon in the hand of a upstream countries. Conflicts seem most probable when a down-stream country depends highly on river water. This situation is very pervasive and intense in Central

³⁵ Peter Gleick (1993), "Water and Conflicts : Fresh Water Resources and International Security", International Security, Vol. 8, No. 1, pp.79-112.

³⁶ David R. Smith, "Environmental Security and Shared Water Resources in Past Soviet Control Asia", Post Soviet Geography and Economics, Vol. 36(6), 1995.

Asia where water resources are too limited or highly exploited and most of rivers flow across the border. The common resources such as river water and border disputes also act as catalysts to international dispute which cannot be denied in Central Asia.

In this state of social instability, social unrest and conflicts, the power structure remains confined or dominated by few people which hinder the realisation of significance of the environment through local people. In these conditions, the state's energy also gets dissipated in pacifying or controlling the situation on one hand, the state eco-political institutions remain under-endowed to have better understanding of environmental scarcity and of organisational skills, on the other hand. The limited resources of the state limit the scope of realisation of optimum use of resources.

In this way, the carrying capacity system (the resources) goes on deteriorating and over exploited which further impinges upon the socio-economic institutions of the state.

CHAPTER V

CONCLUSIONS

This work deals with a comprehensive view point of environmental scarcity and security. Here, environmental scarcity not only means renewable resource scarcity (Homer–Dixion 1994) but also non renewable resource scarcity. Besides the three main sources or causes of environmental scarcity (environmental change, population growth and unequal distribution of resources, as considered by Homer–Dixion etc.), consumption pattern and poverty also make a considerable contribution to environmental scarcity. Thus, a modified version of Homer Dixion’s model has been suggested here.

The framework of the concept “security” encompasses two interrelated components : political security (includes military, economic and social sub-components) and environmental security (includes protection of environment and sustainable utilisation of resource). Various dimensions of “comprehensive security” have been exemplified by the concept of sustainable development. It is associated with interrelationship of economic and utilisational attributes. Thus, it brings out that people are not only to be protected from military threats but also from threats, of social injustice and environmental

unhealthy conditions. Hence, the concept of security includes not only military power projection capabilities of a region but it is also imbedded in ecological and geographical attributes of a region. In this way, environmental scarcity and security are interrelated.

This work highlights a relationship between environmental scarcity and security (conflicts) in Central Asia in the recent past, particularly in the 1980s–1990s. In the late 1980s and the early 1990s the Central Asian republics have experienced some major conflicts: between the Meshketian Turks and the Uzbeks in the Ferghana valley; between the Armenians and the Tadziqs in Lsara regions of Tajikistan; between the Kugis and the Uzbeks in the Osh Valley; and the Tajikistan civil war. In these conflicts, environmental degradation in quality and quantity, population growth (through both natural growth rate and migration), unequal distribution of resources and poverty have played significant role.

In the case of the conflicts between the Meshketian Turks and Uzbeks in the Ferghana Valley, the Meshketian Turks are, for e.g., blamed for insulting a Uzbek old womans; or charging exhorbitant prices of the strawberries etc. But, actually the real cause seems rooted deep in better conditions of living of the Meshketian Turks (aliens) on one hand, and low living standard and rampant unemployment among

the local population (the Uzbeks). It was caused by increasing population pressure and a declined state of production due to mismanagement of land and water resources, lack of coordination between production linkages and deteriorated state of the environment. This unequal distribution of resource was sufficient to let the stories fan the atmosphere like as the Meshketians were getting the best posts in the co-operatives and best flats for housing. It resulted into disrespect to the Meshketians and they were considered one of the causes of the Uzbeks' low living condition.

In the case of the Osh Valley conflicts, between the Kyrgyzs and the Uzbeks, the population pressure and the question of economic deprivation have contributed considerably. The population pressure was generated by the high natural growth rate and in migration of the Kyrgyzs from mountainous (due to the push factors) regions to the Osh Valley. The eco-political institutions of the region were underendowed to find out a solution to the increasing pressure on the limited resources and the created facilities. So, the homeless youth of the Kyrgyzs community started occupying a farm. The Uzbeks considered themselves deprived because they were not allowed to take part in the race. Moreover, inspite of a considerable population, they were not represented in the administrative set up in the province. It started the

conflict. The situation got aggravated when, the Uzbeks from Uzbekistan and the Kyrgyzs from the peripheral areas started gathering and it turned into violent inter-ethnic conflict. It also showed possibility of getting turned into international conflicts.

Since the beginning of the first half of the year 1992, Tajikstan is passing through a state of civil war. Basically, two main groups: the losers, who hardly have any share in the power structure, also known as “New Bolsheviks”; and those who control the power structure, also known as “Bolsheviks”, are fighting each other. The later have understood the Tajik society quickly—that it was a peasant community imbedded in clan structure. It not only lacks skill of democratic culture, but also, tradition of any sort of statehood.

Considering the situation, the later group is controlling the power structure with a considerable clan support and state machinery, leaving a little space for democratisation of institutions. On the other side of the coin, Tajikistan is experiencing rampant unemployment, epidemics of diseases and, moreover, the people are dying of hunger. There exists an unequal distribution of resources and a lopsided power structure. Trafficking of drugs and illicit trade in weapon are quite frequent and open in all parts, the state’s machinery has come to a stand still and no rule and regulation works. All this leads to

disrespect to the existing set up, making the people prone to any kind of propagation and instigation. The porous Tajikistan border and present civil war across the border provide enough space to yield the insurgent activities.

These republics are experiencing negative growth rates, soaring inflation rates and rampant unemployment. The water and land resources are exploited to the extent that upper layer of soil is salinised and soil chemistry is distorted; and water resource is highly contaminated that has resulted in epidemics of diseases. In these conditions, high population growth rate escalates more pressure on resources that results in declining of the pie per head and environmental degradation. These, further, reduce the carrying capacity of resources.

These conditions not only reduce the capacity to cope up with environmental degradation, but also to adopt the sustainable utilisation of resources. These induce rampant poverty in which the poor become vulnerable to the rich. It leads to a process of “resource capture” which causes economic marginalisation of the poor.

When the underendowed eco-political institutions of Central Asian republics coincide with ethnic-hostility and clan-rivalry, then

these lead to lopsided power structure in which a group or a clan captures the power system.

This ethnic hostility and clan rivalry has hampered the process of democratisation in Central Asia . It also seems to induce social tension and instability which disrupts the social institutions. A state of instability in socio-economic institutions impedes realisation of indigenous technology and its implementation; and participation of indigenous people in decision making activities. In case of conflicts, culture remains helpless to engender tool and ways of development that facilitate integrated management of resource. In this way a cycle of irreversibility or degradation in natural resource starts. It has its sever consequences not only on ecosystem but also on socio-economic-political institutions.

If conflicts occur frequently in Central Asia, these may lead to cycle of degradation in natural resources in Central Asia. Similarly, if the Tajikistan civil war prolongs further, it may start a cycle of degradation reducing the carrying capacity.

During the Soviet regime, the arbitrary delimitation of the Central Asian nationalists has caused division of particular ethnic groups in various political boundaries, has created potentiality of conflicts to convert an interethnic conflict of a republic into

international conflict, as in the Osh Valley conflict the Uzbeks of Uzhekistan were supporting the Uzbeks of the Osh Province. In case of interethnic conflict of a republic, one ethnic group (which is in minority in that locality) may get support of the same ethnic group of the adjacent republic, or the adjacent republic may support the related ethnic group which may lead to insurgency.

The common water resources such as the rivers may also become cause of dispute if the upstream republic overutilises or expropriates the resource.

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