

ENVIRONMENTAL MIGRATION: CASE OF KYRGYZSTAN

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ABSTRACT: This paper summarizes the results of the environmental migration study sponsored by the EACH-FOR Project and conducted in several settlements affected by sudden environmental disasters and slow environmental degradation in Osh, Jalalabad and Naryn provinces of Kyrgyzstan in the spring of 2007. This study brings into focus the importance of the often ignored environmental dimension in the study of population dynamics. It also points to the interconnectedness of environmental factors with economic, social, and cultural factors affecting the migration flow of people. The case of Kyrgyzstan shows that environmental migration is a scenario with no winners: both those who migrate and those who stay are losers. Their social networks, built over an entire lifetime, are destroyed. Their livelihood strategies, inherited from many generations of forefathers, become meaningless. Their culture, strongly connected to tribal identity and unity, disappear. As this study has revealed, almost all disasters have anthropogenic roots, whether on the scale of large governmental industries or small-scale individual stock-breeding practices. Current governmental policies in Kyrgyzstan however, deal mostly with consequences and do not address the real causes. There is a need for both top-down and bottom-up initiatives for preserving the slopes, forests, lakes, and rivers of the Kyrgyz ecosystems. Reviving the traditional wisdom and practices could help many Central Asian communities recover the lost ecological balance. This will be the first step towards restoring the damaged social and cultural milieu of the Kyrgyz settlements and communities affected by forced migration.

Key Words: environment; migration; Kyrgyzstan.

1. ENVIRONMENTAL SITUATION IN KYRGYZSTAN

The Kyrgyz Republic covers an area of 198.8 thousand square kilometers (5.3% - forests, 4.4% - lakes & rivers, 54.1% - agricultural lands, 36.2% - other) and about 96% of its territory is located more than 1000 meters above the sea level. About 30% of the territory of the Kyrgyz Republic is habitable, whereas 70% of the territory are high mountains. The Pamir – Altay mountain range is in SouthWest. In the NorthEast there is the Tian Shan with the region's highest point – Pobeda Peak (7439m). These mountain ranges are divided by great valleys and hollows; in the North – the Chui and Talas valleys, in the SouthWest the Fergana valley, in the South, the Alay valley. Both the Pamir and Tien-Shan Mountains are still young and seismically very active (Stepanenko, 1997). This seismic activity and the 7000 meters difference in high and low altitudes are among the main reasons of frequent natural disasters, the larger share of which happen in Southern Kyrgyzstan (MES, 2007).

1.1 Natural Disasters

The territory of the Kyrgyz Republic is geologically considered to be the most dangerous area of Central Asia and it is subject to more than 20 kinds of dangerous natural processes which cause natural disasters like earthquakes, landslides, floods, stone falls, avalanches, etc.

The distribution of the frequency of major emergency situation in the Kyrgyz Republic is following: floods – 30%, landslides – 16%, technogenic – 10%, earthquakes – 9%, meteorological – 9% (MES, 2008)

Annually, seismologists record about 3000 earthquakes, tens of them are strong, although as a rule few cause the damage to houses and buildings. According to geological specialists, more than 200 localities are categorized as seismically dangerous. In 2006 there was a magnitude 7 earthquake (on the Richter Scale) in the Naryn oblast. 444YTGFIts epicenter was in Kachkor village, and this caused damage to 7003 houses and 50 public buildings. 7 were completely destroyed and 1322 were severely damaged. On the 8th of January 2007, there was an even larger earthquake in Batken, scoring 8 points on the RS. It damaged 7,137 houses, 90 of them were severely damaged (MES, 2008)

More than a half of the territory of the republic is subject to avalanche danger. The duration of the avalanche season is 5-7 months. Every year y avalanches cause frequent emergency situations on the mountain roads. More than 10 river basins and 800 avalanche-dangerous areas have been identified in the country. 50 people died under avalanches during the period of 2002-2007.

Because of intensive glacier thawing as well as plentiful snow-and rain-falls, every Spring many regions of the country are subject to flooding. There are 3,100 river flood basins on the territory of Kyrgyzstan. Also, 200 of our 2000 Alpine lakes have the potential for causing floods. In 2003, 38 locals of Sogot village in the Uzgen region died from flooding. In 2004, in the area of Kaynama Budalyk village of Alay region, a flood killed 33 people, 17 of whom were children. Also, in April 2004 on the Karasogot area of Karasu region of Osh oblast, a flood with a volume of 60 thousand m³ took the lives of 5 school children. In the end of March 2005 a flood on the territory of Sarybulak village of Karakuldja region destroyed the road, and wiped-out 700m of the electrical lines and 1,5km of communication lines. In 2003, after the flood, 50 families from this village were relocated.

Landslides are another major environmental disaster common in Kyrgyzstan. Eighty-eight people were killed by them during the period from 2002 to 2007 (MES). Currently, there are more than 5,000 active landslides in Kyrgyzstan. More than 509 settlements are, or can be affected, and more than 10,000 families live in endangered houses. Floods and landslides can also be seen as the result of human activity. The main reason for the increase in their numbers in recent years is soil erosion on mountainous slopes which is caused by the overgrazing of pastures. Later in the paper, this research will analyze this in more detail. In the next section this research addresses a more explicit anthropogenic activity effecting environment – uranium mines.

1.2 Anthropogenic Disasters

The extraction of uranium, heavy metals, and mercury, along with the accumulation of their wastes, are among the main man-made environmental disasters in Kyrgyzstan. They cause environmental pollution and constitute a serious existing and potential health danger. These threats are aggravated by the fact that the Kyrgyz Republic is situated at the upper portion of the region's water basins, therefore contaminated substances from its territory can reach to the other regions of Central Asia through numerous water flows. There are 5 main uranium tailing-fields in Kyrgyzstan: Mailuu-Suu, Kara-Balta, Ming-Kush, Kaji-Say and Ak-Tuz.

The extraction of uranium in Kyrgyzstan started in 40's as a part of the Soviet nuclear program. It was aimed to provide nuclear electric-stations in Russia with raw materials. At that time, Kyrgyz towns and villages, situated near the uranium pits had restricted access and were classified as secret. The extraction of uranium in Kyrgyzstan continued until 1968. Then, the pits were closed, but the tailings, where the uranium wastes were stored, remained. There are more than 250 millions m³ of wastes in 92 locations where the mining industry existed on the territory of the republic; they all contain radio-nuclides which are hazardous and toxic for humans. After the collapse of the mining corporations of the Soviet Union, for service and safety support these 36 tailing-fields and 25 pits with the total volume of 15,7 millions m³, were placed under the authority of the Ministry of the Emergency Situations of the KR. They included:

- 31 tailing-fields with radioactive wastes – 7,2 millions m³;
- 5 tailing-fields with toxic wastes – 5,2 millions m³; and,
- 25 mountain pits of un-recovered ores – 3,3 millions m³.

Potentially dangerous natural processes, such as landslides and floods were not taken into account during planning and construction stages of these sites. Most of the tailing-fields are situated in river-beds, which continuously erode them, resulting in discharges of radioactive substances into the environment: soil, atmosphere, and subsoil waters. The situation is complicated by the activation of landslides and earthquakes in the tail-fields zone. Scientists state that there is a real danger of the discharges of radioactive wastes into Kyrgyzstan's rivers. In the case of possible pollution, the water arteries of Kyrgyzstan belonging to the basins of Syrdarya and Amudarya Rivers can quickly spread radioactive and toxic wastes into the territory of Uzbekistan and Tajikistan. A large scale discharge would cause a regional catastrophe and threaten the existence of a large part of local population and environment. Currently, the MES works on reburying the wastes. From 1999 until 2007 it spent 8,8 million som, but only temporary safe conditions of tailing-fields were provided (Rajabov, 2008; Zvyagelskaya; 2001, Gruzdov, 2003; Mamajakyp uulu, 2005)

2. MIGRATION

Almost half of the Kyrgyzstan's population lives in poverty: 55% of the rural population and 28.3% of urban. Other 16.9% of rural and 6.9% of urban population live in extreme poverty (Tishin, 2007). As a result of economic and political reforms in 90s, migration became the number one issue in the Kyrgyz Republic. High unemployment rates, decrease in living standards and lack of social protection are the main factors causing high-scale spontaneous migrations, both internal and external. It appeared that migration peaked in the period between 1991 and 1993. Around the year 2000 migration processes became more stable and showed lower rates, but after the events of March 24, 2005 these process increased again. About 400 thousand citizens of the Kyrgyz Republic leave the country every year. Most of them travel to Russia and Kazakhstan as labor migrants. Such situation is connected with a high demand of labor there, better salaries in these countries, and extreme poverty, especially in the Southern Kyrgyzstan.

This scale of migration aggravates demographic problems in the republic, which is characterized by the decreased birth rate, and increased death rates — thus a decrease in the population growth of an already low-density population country. The intensity of migration processes and decrease in the natural growth negatively affects the labor potential of Kyrgyzstan and strengthens a tendency towards an “ageing” population.

Besides external, there also active internal migration processes. The main direction of migration flows is from the impoverished South to the more prosperous Northern regions, in particular to the capital city Bishkek. Since independence the population of Bishkek has almost doubled because of this huge inflow of migrants. Southern regions lack any kind of employment; they are overpopulated and there is a strong shortage of land. Very often this internal migration serves as an intermediate stage for earning money to travel to Russia.

The existing studies done on migration processes in Kyrgyzstan have looked at the number of factors causing migration: economic, social, cultural and even religious. However, hardly anyone considered the role of environmental degradation in people’s decision to move. This study has aimed to establish this important missing link, and analyze the environmental causes for migration. It has done so through 1) interviews with experts in the field of environment and migration, and 2) observations and interviews with migrants as well as the non-migrants still living in the areas affected by sudden environmental disasters and slow environmental degradation. The findings of the study are described in the following sections.

3. EXPERT INTERVIEWS

One of the goals of this project was to examine the perception of representatives of governmental, non-governmental and international organizations regarding the association between the migration and environmental hazards. Experts were also asked to identify the factors that contribute to, or restrict the likelihood of, ecological migration.

Expert opinion on the role of environmental factors in migration processes was divided. Some viewed migration as a response to high rates of poverty and unemployment and claim that the environmental conditions are of little or no significance. Other experts claim that there is a straightforward connection between environmental hazards (both natural and technological) and migration. They argue that economic factors are intertwined with environmental factors and that it is meaningless and difficult to separate economic migrant from ecological.

Most experts have indicated that the majority of residents in risk-prone areas do not migrate. The decision to move or to stay depends upon individual, household and community characteristics that will be discussed later in this paper. If they do move, usually households move only a short distance away, which is linked to limited resources, family ties, and belief that the effects of hazards are temporary. In addition, there are many cases when migrants eventually return home due to the fact that they could not adapt socially, culturally, or economically to their new environment. Often experts also explain the decision to migrate in terms of the financial situation of the family. The relationship however is very complex. Some experts have argued that migration is an option available only to wealthier households. One argument to support this is that migration involves a number of costs, such as transportation, purchase of new houses in a new place and purchase of land or livestock. Since poor people cannot afford such expenses, they often decide to stay where they are.

However, a number of experts counter-claimed that the less socio-economically advantaged may be more likely to migrate. Families with more assets are believed to be less prone to abandon or sell the house, livestock, and land that they own. Whereas poor families have nothing to lose and therefore they are more likely to try to build their life in a new location.

In addition to material well-being of the households, the association between migration and environmental hazards varies by setting and location of the household. Thus, most of experts underline the fact that

among high-risk areas, the rate of out-migration is generally higher in small post-industrial cities and the rural areas of Kyrgyzstan. Such association can be attributed to limited employment and income generation possibilities, which therefore leads to poor social and cultural infrastructure of the community.

Migration decisions are also closely related to the strength of community ties. Thus, people are more likely to stay, or migrate only temporarily, if most of their relatives reside in the same area. In addition, those who do decide to migrate usually move to places where they have relatives and/or friends. In a country where government support is limited and scarce, social networks are of vital importance. Thus the presence of relatives and/or friends can ease the process of cultural and social adaptation in new environment and serve as a source of potential financial and psychological support.

In some cases, only few household members migrate while others stay behind. The decision who should stay and who should move represents household migratory strategies as related to natural hazards. Many experts have pointed out that those who move tend to be younger or middle-aged and characterized by higher educational levels. This decision rests on assumption that such family members have wider variety of employment opportunities in new locations.

Results also indicated that a lack of government aid restricts the residential choices of many inhabitants of risk-prone regions. Most of the experts said they were unaware of any centralized program on ecological migration. Moreover, the rate of out-migration is lower in communities where disaster preparedness and/or relief programs are carried out.

Many residents in hazardous locations do not migrate because they have no choice. Most of the land is privatized in Kyrgyzstan. The scarcity of land is especially visible in the Southern regions where the majority of natural disasters take place. Those who wish to be relocated are either provided with land of "less quality" or that which is in other risk-prone areas. Many people refuse to relocate and sign a document stating that they are aware of potential risk and confirm their informed decision to remain in the dangerous place.

Finally, people refuse to move due to emotional attachment to their location, which is more apparent among older inhabitants. They claim that they cannot move since this is a place where they have been born and raised, and that they would like to be buried with their ancestors.

Although, experts had different perceptions regarding the role of environment in migration decisions, all of them believe that influence of environmental hazards on different aspects of human life will intensify and, as a result, the number of ecological migrants will increase. Therefore, many experts suggested that we should design a strategic program that will address the short and long term consequences of environmental hazards on human well-being.

Interviews with experts allowed the research team to shape a general perspective on the situation, to formulate some additional questions and issues for our fieldwork and to identify areas for fieldwork visits. The research then employed methodology developed by the EACH-FOR project, which included observations and interviews with non-migrants, and a questionnaire survey of migrants and non-migrants in the identified settlements. The team of four split into two sub-teams: one studied the Naryn province in Northern Kyrgyzstan and another studied Osh and Jalalabad in Southern Kyrgyzstan. This research presents the findings of this fieldwork in two parts described in the following sections: 1) Description of settlements and 2) analysis of questionnaires.

4. RESEARCHED SETTLEMENTS

The research team conducted work in 7 territories/settlements in Southern and Northern Kyrgyzstan: Min-Kush and Chaek (Naryn province), Mailuu-Suu (Jalalabad province), Kara-Sogot, Nichke-Sai, Kara-Kulja, Kurshab and Manas Aiyly (Osh province). Min-Kush, Chaek and Mailuu-Suu were chosen as areas affected by radiation from uranium mines. Other settlements were chosen on the basis of major natural

disasters: earthquakes, landslides and floods. Because of limited space, the research describes two settlements in this section: Mailuu-Suu – town with uranium wastes, and Kara-Kulja – an area of frequent landslides and floods.

4.1 Mailuu-Suu

Mailuu-Suu is a city in Jalal-Abad province. For a long time it was a city with restricted access, not only for foreigners but also for Soviet citizens. Earlier it was classified as secret and was called “Mailbox 200”. It is situated only in 150 km from Osh. Mailuu-Suu is marked as the most ecologically disastrous area of Central Asia. The American University of Blacksmith, which does research on environmental issues, placed Mailuu-Suu in the top-30 of the most polluted cities of the world. There are 2 million tons of the uranium waste contained in 23 tailing-fields. The full area of the tailing-field is 432, 000 m². The combined radioactivity of all the tailing-fields of Mailuu-Suu is 5000 kury. Within 22 years (1946-1967), from the work of 2 hydro-metallurgical factories, 10,000 tons of uranium oxide and protoxide were extracted. Mailuu-Suu survived a crisis of closing and re-profiling of the uranium pits. Later a electro light bulb factory was opened in the city. Currently, soil erosion and landslide activity were on the rise for two reasons: the mines in the hills weakened the soil structure and second – overgrazing of the hills by local animal stock. Such a situation rings alarms for the Kyrgyz government, for Uzbekistan, and for a broader international community. If tailing-fields are damaged and uranium waste slide into the waters of Mailuu-Suu River, it will lead to a regional ecologic catastrophe and poison a large part of the Ferghana Valley. Currently, the MES is using money from international donors to rebury the waste on the same territory.



Figure 1: Ruins of the Sary-Be Village in Mailuu-Suu

The research team spent one day in the Sary-Be village on the outskirts of Mailuu-Suu. 17 tailing-fields surround the village. What the team saw looked more like a scene from a war or horror movie (see Figure 1 above). Some surviving, but empty, four-storey apartment buildings, were surrounded by the ruins of houses dissembled for construction materials. The majority of population was elderly. The younger generation has left. Many of those who remained are alcoholics. One fairly drunk fellow suggested that if you have 100 gram of vodka every day, it will reduce the effect of radiation. But for us it looked more as if alcohol offered means to forget about the terrifying reality of one's body being slowly and continuously destroyed by radiation hundred times higher than is safe. Interviews with residents and with a doctor at the local clinique revealed that the effect on health was enormous. One young mother of four described how her mother died from cancer, her father was blind and terminally ill, she had cancer herself and four of her four children all had goiters. The doctor mentioned dozens of illnesses common to their village: various types of cancer, low energy, fertility problems for women and erection problems for men, poor mental health for boys and many others. People are dying, but still they stay. Why?

We were told a local hypothesis, which may or may not be true – the bodies of local residents are so used to high radiation that they cannot survive without it, so those leaving the place either die or come back unable to adjust to a normal radiological environment. It was a circle with no way out. A less

complicated explanation was that they simply did not have means to escape: there was no help from the government and no personal funds to migrate. Finally, in spite of radiation, they had some land for vegetables and fruits and small pastures to feed their animals on the hills. The team left the village with a deep feeling of emptiness, and an absence of hope. Most of the team did not feel well for a week after the trip, either because of what they saw or because of only few hours of exposure to high radiation.

4.2 Kara-Kulja

Research team, studied several other villages located along Kara-Kulja River – territory prone to landslides and floods. Major landslides happened in this area 2-3 times since the 1990s. All together 209 people were relocated from this area. Usually government and local authorities monitor the landslides and they try to move people or try to put them in safer places during potential dangers. The authorities ban people from using dangerous places and ban animal grazing in those areas. In spite of this danger, some people never move. Others move to safer places for a while, but soon come back, mainly because the new land they are given is small and doesn't have water, where as in their original place they had plenty of land and water for agriculture and pastures rich in grass for grazing. Many families move out temporarily from their houses during dangerous seasons like in the spring, or during heavy rains, and then come back.



Figure 2: New Landslide Developing near Sary-Tash Village in Kara-Kulja Region

Sary-Tash (Yellow Stone) is a village of those who relocated permanently because of landslides. All houses here are newly built, but many of them are empty. The village was surrounded by hills on one side and the very steep bank of Kara-Kulja River on another. The government provided long term loans, which covered most of the constructions costs for the new homes. Some construction materials were also provided. The main concern of the villagers was that they were moved from one environmental disaster to two new ones: absence of water and a newly developing landslide. When they were relocated, they were told that the new location was a safe to live. However, after they built houses and started to settle, a new landslide emerged on the nearby hills (see Figure 2 above). This landslide is getting closer and closer each year, but the government does not address the issue saying they have already received their money and that this landslide will not occur. Absence of water is not considered a sufficient reason to relocate them.

Sary-Tash has no school and basically no services. Residents have no access to clean drinking or irrigation water. It was a dry, dusty, and fairly empty settlement. The villagers complained that locals do not allow them graze their animals on the local pastures, yet they don't have any of their own here. Migrants in Sary-Tash live in miserable conditions with access to practically nothing. They are cut out from their relatives, their community, and their basic needs are not met. This new village is already

experiencing out migration as many realize there is no future in Sary-Tash. Therefore, people are even leaving these nice, newly built houses in search of a more suitable place to live. The case of Sary-Tash village shows how poor planning of new settlements, and a lack of proper land, often leaves those who migrate in worse conditions than they left.

The two settlements described above help us form an overall impression of the migration situation and form some major preliminary conclusions. These two portray two very different images with one common factor – there was very little positive about either of them. It seems that both those who stay and those who migrate were losing. To test this finding and look for other, deeper connections, between environmental problems and migration, we conducted an analysis of migrant and non-migrant surveys. Due to limitations of space, only summaries of the analysis are presented in the following section.

5. MIGRANT AND NON-MIGRANT QUESTIONNAIRE SURVEY

5.1 Migrant Survey: The Environmental Migration Chain

The research team studied 30 migrant families living in 11 villages located in 3 provinces of Kyrgyzstan. The analysis produced a following chronological chain of events describing migration caused by environmental problems.

In the mountainous regions of Kyrgyzstan, animal husbandry is the main source of income and survival for population. In the harsh economic realities after the break-up of the Soviet Union, people tried to increase stock breeding. In the absence of state-regulated control this led to overgrazing of pasture lands. Overgrazing led to soil erosion and to increased land-slide and flooding activity. Environmental degradation and danger became the main reasons for migration. No other factors (economic, social, or political) had carried as much weight. The government supported resettlement both forcefully and with long-term loans for building houses. They also provided people with new land. However, because of overpopulation in Southern Kyrgyzstan, the new land provided was very small and allocated in places with little water and no grazing lands near-by. Therefore, migrants often moved from better places to much worse new locations. They used their savings and livestock for migration, only to find that they can barely survive there. In the migration process they managed to preserve some of their family links, but lost almost all broader social networks.

Therefore, at the beginning of the environmental migration chain we see harsh economic realities and absence of control over people's activities as the main reason for environmental degradation forcing people to migrate. At the end of the same chain there is a dislocated migrant family, who has lost their natural, social, and cultural environments, as well as most economic opportunities.

5.2 Non-Migrant Survey: Living in Ruins

Our research also studied 36 non-migrant families living in 7 villages in 3 provinces in Kyrgyzstan. The results show that those who remained behind generally are economically better off than those who left. They preserve their land and animal stock. However, they are massively affected by environmental disasters/deterioration and by out-migration. The main effect of the environmental problems are on their physical and psychological health (especially in the places of former uranium mines) and on their livelihood (decline of harvest and loss of animal stock). The effect of out-migration results in the lost socio-cultural milieu, ageing population, demoralized youth and deterioration of physical infrastructure. As many as 80 families leave some villages in one year. The pressure for those who stay builds up: most of them want to leave because of environmental problems, but cannot. On one hand they are afraid of economic difficulties in new locations; on the other hand they don't have the means to move. So they carry on waking up everyday to the horrifying reality of their bodies being destroyed every second of living in these radioactive zones, or hoping that their homes will not be squashed by a developing landslide.

6. CONCLUSION: SCENARIO WITH NO WINNERS

The Kyrgyz case shows that migration processes in Kyrgyzstan have a strong environmental flavor and that environmental problems causing migration and displacement of large groups of people bring only negative, deteriorating impacts on the life of local communities. The uniqueness of environmental migration is that very often it is not a choice, but the only solution in a no-win scenario: both those who migrate and those who stay are losers. Their social networks, built over an entire lifetime, are destroyed. Their livelihood strategies, inherited from many generations of forefathers, become meaningless. Their culture, strongly connected to tribal identity and unity, disappear. This study brings into focus the importance of this often ignored environmental dimension in the study of population dynamics. It also points to the interconnectedness of environmental factors with economic, social, and cultural factors affecting the migration flow of people.

7. RECOMMENDATIONS: RESTORING THE BALANCE

As this study has revealed, almost all disasters have anthropogenic roots, whether on the scale of large governmental industries or small-scale individual stock-breeding practices. Current governmental policies in Kyrgyzstan however, deal mostly with consequences and do not address the real causes. There is a need for both top-down and bottom-up initiatives for preserving the slopes, forests, lakes, and rivers of the Kyrgyz ecosystems. One solution can be found in reviving the traditional indigenous methods of animal husbandry and agriculture, which were developed during several millennia of evolution. Kyrgyz nomads were always very considerate of treating pastures with great care. They were not attached to one place, but were following the favorable climate and thus were a part of complex and interconnected ecosystem. Many of these practices and large part of traditional ecological knowledge were lost over the last century of collective farming and sedentarization.

It is also important to revive the aboriginal breeds of sheep and sorts of fruits and vegetables grown in Kyrgyzstan. These are much better adjusted to local environmental conditions. For example, the aboriginal Alay sheep consumes much less grass and exerts significantly smaller pressure on pastures while feeding than many new heavy hybrid breeds brought and cultivated in Kyrgyzstan during the Soviet times. Another example is the aboriginal *Kasek* apricot, which requires watering only 2-3 times a year, compared to many imported apricot trees requiring 6-7 times more water. This is extremely practical in the Southern Batken province strongly affected by draughts. Currently, there are several initiatives taking place in Kyrgyzstan aimed to preserve the agro/biodiversity of our region using the indigenous methods. Reviving the traditional wisdom and practices could help many Central Asian communities recover the lost ecological balance. This will be the first step towards restoring the damaged social and cultural milieu of the Kyrgyz settlements and communities affected by forced migration.

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