

grammes have similar strategic intents — the revitalising and restructuring of the respective economic complexes — they considerably differ in terms of their goals, objectives, instruments, approaches, and, ultimately, expected results of their implementation. One should note that the Russian Programme “Economic and Social Development of the Russian Far East and Transbaikalia for the Period till 2013” has narrower goals and, therefore, offers a narrower range of opportunities for the regional development. As seen from Table 4, the Programme goals were narrowed down in the process of the most recent Programme revision in 2007.

The implementation of the Federal Targeted Programme and, in particular, of its infrastructure component will definitely be beneficial to the Russian Far East. However, the Programme that implies a traditional development model based on natural resource harvesting can hardly lead to a radical transformation of the sectoral structure of the regional economy. It is likely that the implementation of a number of infrastructure projects alone will not be enough to launch a qualitatively different development model. As seen from the experience of the Baikal-Amur Mainline project — a major national-level infrastructure development project implemented in the Russian Far East — “the commissioning of the mainline did not result in an automatic emergence of a second latitudinal industrial complex, as many hoped”⁵. To achieve a qualitative transformation, special efforts and special conditions are required; in particular the concept of the creation of an “industrial and service arc” in the southern part of the Far East should be explored in detail. The latter concept was proposed by P.A. Minakir, a member of the Academy of Sciences, for the purpose of elaborating mechanisms for “transforming objective threats into objective advantages” and “intercepting a part of additional revenue streams received by our partners in Northeast Asia, i.e. redistributing the regional multiplier effect for the benefit of the Russian Far East”⁶. The other “alternative for the Russian Far East is being subsumed, in trade and economic terms, by the integrated market of Northeast Asia as a transportation and resource segment”⁷.

Comparative analysis of the two government development programmes helps better understand possible structure of the “industrial space” which is being formed in “peripheral” regions of Russia and China, fields and the degree of their possible cooperation and mutual dependence, as well as benefits and threats to the development of bordering Pacific regions of the two major global players.

1.2. Accountability of environmental factors in regional development strategies, programmes, and plans in Russia and China: a case study of the Russian Far East and Northeast China

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Over the last two years environmental priorities and concerns have received increasingly more attention in the rhetoric of both federal and regional authorities dealing with the modernisation of the economy of the Russian Far East. For example, in autumn 2008, Sergey Darkin, Governor of Primorsky Krai, defined environmental priorities of the region for the years to come in his speech at the Third International Environmental Forum “Nature without Borders”. These priorities include intensification of the law enforcement in the field of environmental legislation; further development of the legal framework of natural resource use; creating economic incentives for the adoption of cleaner, low-waste and resource efficient technology; and creating a new economic sector using industrial and municipal waste as an input stream. In particular, a number of low-waste wood processing industries to be built in the region — a pulp plant, an OSB panel factory etc. — are being designed¹.

Yet, of all strategic development programmes of the RFE regions the development programme of Primorsky Krai (approved by a regional law on October 20, 2008) is particularly short on statements regarding environmental priorities or projects. The document states: “The development of agriculture will be a priority for Primorsky Krai. The key development focus will be the production of environmentally clean food products without transgenic modifications”. The most significant projects in the field of energy saving and energy efficiency include the construction of new generating capacities and modernisation of the existing ones, particularly: the modernisation of Artemovsk CHPP and Vladivostok CHPP-2 and their conversion to natural gas, as well as the construction of a nuclear power plant in Primorsky Krai. No other provisions related to environmental priorities are found in the Strategy².

⁵ Minakir P. A. *Jekonomika regionov. Dal'nij Vostok*. M.: Jekonomika, 2006, p. 320.

⁶ *Ibid.*, p. 661—662.

⁷ Minakir P. A. *Tihookeanskaja Rossija: vyzovy i vozmozhnosti jekonomicheskoj kooperacii s Severo-Vostochnoj Aziej // Prostranstvennaja jekonomika*, 2005, No4, p. 8

¹ <http://www.rg.ru/2008/11/13/reg-primorie/ecology.html> (November 13, 2008).

² <http://www.pacific-congress.ru/ru/total-materials/1>; <http://primorsky.ru/governor/?a=3328&s=72&p=1>

In May 2009, at the meeting “On Cross-Border Cooperation with China and Mongolia and Development Objectives of the Eastern Regions of the Russian Federation”, Russian President Dmitry Medvedev did not address environmental priorities directly, but emphasised the need “to work on changing our priorities, moving away from low-tech exports of raw materials to their processing, and creating state-of-the-art processing capacities, which helps gain maximum possible benefits from international economic cooperation”³.

The Strategy of the Socio-Economic Development of the Russian Far East and the Baikal Region for the Period till 2025 was signed by Russian Prime Minister Vladimir Putin on December 28, 2009⁴.

Original goals of the Strategy developers were quite ambitious. As an example, one can mention a goal of increasing the population of the area by 2.5–3 million over the next 15 years (it is clear that the developers expected this increase to be achieved entirely due to internal migration and natural population increase, otherwise the issue would be discussed in quite a different manner). This proposed goal was cited in September 2009 by Sergey Yurpalov, a Deputy Minister of Regional Development of the Russian Federation⁵. At the same time it was entirely unclear how the federal or regional governments were going to reverse the trend of steady decline in the Russian Far East population, which had continued over the past few decades (in the first half of 2009, Yakutia was the only region of the Russian Far East that experienced a slight increase in population). In fact, by tracking the changes in this indicator alone in the years to come one would be able to see whether the Strategy as a whole was realistic or not. Therefore it was not surprising that this goal was not included in the final version of the Strategy approved by the government. The figures included in the Strategy annexes provide only for a modest increase (approximately by 200 thousand) in the number of those employed in the Russian Far East’s economy between 2005 and 2015. At present, however, the Far Eastern Federal District has one of the largest negative net migration rates in Russia (minus 26 thousand in 2008).

The document defines the strategic development goal of the Russian Far East and Baikal Region as the creation

of a well-developed economy and a comfortable living environment, and the achievement of the average Russian socio-economic development level. It is clear that the notion of a comfortable living environment is closely related to the state of the natural environment. In this regard, one can appreciate the rhetoric of government officials who presented the key elements of the Strategy to participants of the Fourth Far Eastern International Economic Forum. Among the main principles of and approaches to the Strategy implementation they mentioned the following⁶:

Maximum level of nature protection — granting permits for the extraction or harvesting of natural resources only under the condition of using the technology with lowest possible environmental footprint and implementation of compulsory measures on the restoration of the natural environment. This will also require designing and implementing integrated programmes to monitor environmental safety of operations and amending the existing legislation on compensation for environmental damage⁷.

In addition, compensation of irreversible environmental damage caused by human activities should have a regional component determined by lost revenues of the respective regional budgets and the decrease in employment associated with the damage.

Maximum resource efficiency — granting permits for the extraction or harvesting of natural resources only under the condition of a high efficiency of the resource use. The authors of this provision believe that such an approach will facilitate the adoption of new resource harvesting and processing technologies, in fact introducing the “technology-for-resources” principle.

Of particular importance in the environmental context is the principle of **global innovativeness** understood as the “capability to implement global innovative projects for the benefit of the entire mankind on the basis of international cooperation”. The key priorities in this area include:

- efficient (optimal) use of the ocean potential (shelf): hydrocarbons — biological resources — tidal power plants — evaporation (desalination) — deep ocean currents — other opportunities (storms, hurricanes, tsunamis, standing waves etc.)⁸;

³ <http://kremlin.ru/transcripts/4160> (May 21, 2009)

⁴ The official text of the Strategy is available at: <http://government.ru/gov/results/9049/>. The protracted process of the Strategy development even elicited a public remark from Russian President Dmitry Medvedev who noted during his visit to the Far East in autumn 2008 that, while the time had long come to start implementing the national modernisation strategy, the deadline for submitting a draft Far East development strategy to the government (June 18, 2008) was long past. The President’s criticism had an effect, and a few days later, on October 1, 2008, Igor Shuvalov, the First Deputy Prime Minister of the RF, held a meeting on the preparation of the draft strategy. See: Golobokova, Ya. Strategy 2020: Regional Dimension. Vlast, 2008, 12, p. 139.

⁵ <http://dvcongress.ru/doklads/yurpalov.pdf>

⁶ <http://dvcongress.ru/doklads/vvedenie.pdf>

⁷ For example, the compensation for irreversible environmental damage caused by the Sakhalin-1 project in 2006 was only USD 11 million — a dramatic underestimation of the actual damage.

⁸ It is difficult to understand what exactly is meant here, particularly under the “other opportunities” subcategory. Probably, this is something inspired by science fiction.

- use of the potential of tectonic activity and volcanism (use of volcanic gases and magma), evaporation (water desalination), temperature difference (power, heat etc.);
- geothermal potential;
- integrated system for the use and restoration of natural systems (forests, rivers and lakes, mountain systems);
- wind energy;
- potential of deep layers of the Earth;
- opportunities for extracting mineral resources from easily accessible raw materials with low resource content — e.g. platinum sands;
- growing and processing crops for biofuel on a large scale⁹.

Compared to presentations on the Strategy, the official text of the Strategy itself does not look that ambitious, although it is not surprising that the document frequently mentions “innovations”, “resource efficiency”, and “nature protection”. In particular, the Strategy objectives include the adoption of energy and resource efficient technologies in 2009–2015¹⁰; the implementation of “a system of measures to facilitate the development and introduction of resource and energy efficient technologies”, “compulsory measures for identifying carrying capacity of natural systems etc.”¹¹.

The main area of activities with regard to the environment is framed in the following way: “In the long run, energy and environmental security of the Far East and Baikal Region will be ensured by means of the development and use of tidal energy, geothermal energy resources, wind and solar energy etc. An important factor of the transition to environmentally sound energy is the adoption of necessary legislation providing incentives for broader use of renewable energy”¹².

It is important to note that the Strategy and a number of other official documents typically view environmental issues as a factor “directly influencing the economy and the social sphere of the region”. It is illustrative that immediately after making this rather broad statement

the text goes on to observe that “...from this perspective, a river border shared with China becomes a problematic factor giving rise to real challenges and threats rather than a competitive edge factor”¹³.

Public discussion of the Strategy started only after the final approval of the document. In particular, on January 26, 2010 public consultation on the draft Strategy implementation plan was launched in Khabarovsk¹⁴. The draft plan was amended in April 2010, but has not been officially approved yet.

There have been both official coverage and unofficial discussions of the Strategy in the media (mainly on the Internet).

Governmental websites of Primorsky Kray and Kamchatka Kray encouraged the public to submit comments and suggestions via email; no open online discussion was organised. Some public remarks were made by officials of the United Russia Party¹⁵, but they were entirely supportive and did not contain any criticism of the Strategy. More interesting comments were made by Victor Ishayev, the Presidential plenipotentiary envoy in the Far Eastern Federal District. In particular, he said: “...People never lived and worked here without incentives. When Stolypin carried out his reforms [which, among other measures, encouraged farmers to move to Siberia and the Far East], settlers were offered a one-off 100 roubles allowance, free land and tools. ...We need to make people’s life in the Far East comfortable...”¹⁶. “...First and foremost, we emphasise the importance of the comprehensive and proactive infrastructure development in the Far East. Motorways, railroads, ports and airports need to be built here. For example, we explore opportunities for the construction of the Baikal-Amur Mainline-2, since it is no longer possible to further develop the Trans-Siberian Railway. The government plans to promote industrial development of the region, to energetically build housing for people. If we make life in the Far East comfortable, people will start moving here on their own initiative...”¹⁷.

Unofficial discussions are represented by blog posts and readers’ comments on online news items. They can be categorised into:

⁹ Despite these declarations, the list of specific projects included in the Programme of Cooperation between the Regions of Far East and East Siberia of Russia and Northeast China for the Period 2009–2018 signed by the heads of the two nations on September 23, 2009, contains virtually no high-tech or innovative projects, unless the construction of plants for high value-added wood processing is counted as such (an area of economic development promoted by Vladimir Putin since his presidential term).

¹⁰ <http://government.ru/gov/results/9049/>, p. 10.

¹¹ *Ibid.*, p. 209.

¹² *Ibid.*, p. 193.

¹³ <http://www.primorsky.ru/content/?s=1856>

¹⁴ http://www.minregion.ru/activities/territorial_planning/strategy/federal_development/346/

¹⁵ <http://www.er-duma.ru/press/39437/>

¹⁶ http://www.tpp-inform.ru/partner/partner_195.html?Number=2610/

¹⁷ <http://baikal-daily.ru/news/15/5830/>

- **entirely negative**, reflecting the rejection by any government's initiatives by a significant portion of the public ("no strategy ever worked, works or will work here");
- **substantive comments**, including criticism. The main points of criticism include:
 - 1) the lack of consistency between the Strategy and the Programme of Cooperation between the Regions of the Russian Far East and East Siberia and Northeast China (2009–2018);
 - 2) the lack of ideas in such areas as the development of civil society, transformation of society's values, development of democratic institutions, and improvement of the openness and transparency of government authorities, which effectively turns the Strategy into a regional plan for economic development;
 - 3) the lack of a small and medium development programme in the Strategy. According to commentators' estimates, in the absence of such a programme, and given the annual population decline by 10–15 thousand, by 2025 the population of Primorsky Krai will amount to 1.8 million and will almost entirely consist of government officials, military servants, other government servants and pensioners.

The main instrument of the Strategy implementation are Federal Targeted Programmes (FTPs) "Economic and Social Development of the Russian Far East and Transbaikalia for the Period till 2013", as well as "Socio-Economic Development of Kuril Islands (Sakhalin Oblast) for 2007–2015"¹⁸. The first one is the most interesting in the context Russia-China cooperation, but at the same time difficult to discuss it in specific terms, since the Programme is being revised at the moment. The existing draft mentions unbalanced structure of the natural resource use in the region and proposes a number of traditional recommendations formulated in a rather general and unspecific way (e.g. remediation of environmental "hotspots", environmental monitoring, introduction of clearly defined environmental standards, transition of the energy sector to a "greener" fuel mix, development of forestry infrastructure etc.). The document is somewhat more specific on the proposed introduction of a separate waste collection and processing system (instead of waste combustion). Experts regretfully note that "despite numerous discussions of demographic problems, the Programme does not address them"¹⁹.

The Programme authors explicitly recognise that "the planned structural changes in the economy of the Russian Far East and Transbaikalia will be associated with contradictory trends regarding impacts on the natural

environment". At the same time they are convinced that "the expansion of industrial operations on the basis of the modernisation will be a powerful factor contributing to the stability of the environmental situation", and therefore the Programme implementation will not ultimately result in an environmental degradation. Obviously, avoiding further environmental degradation is viewed by the authors as the best possible scenario, and any environmental improvement is beyond reasonable expectations.

In the future, it is planned to extend the Programme period to 2018, to increase its federal funding, and include one more region of the Russian Federation — Irkutsk Oblast — in the Programme. In addition, the Russian Ministry of Regional Development is reviewing the proposal by the President of Sakha (Yakutia) Republic to align the periods of the Programme and the Strategy of the Socio-Economic Development of the Russian Far East and the Baikal (i.e. effectively extend the Programme to the year 2025).

The previous version of the Russian Far East and Transbaikalia development programme adopted in 2002 was obviously ineffective and often criticised by scientists and NGOs. In particular, WWF experts observed that the programme was a collection of diverse projects and good intentions rather than a consistent integrated strategy and had several fundamental flaws, while the implementation process was a long series of failures. In particular, the programme:

- did not require a compulsory environmental expert review, a procedure which could help avoid or mitigate environmental issues, and no such review was carried out;
- received only a small fraction of the planned funding, which made it impossible to design and implement viable development schemes or plans;
- was confined to Russian territory and did not take into account the Plan of Revitalising Northeast China, thus failing to take into account conflicts and joint projects, which were a major and probably the most significant factor of the economic and political development of the area.

As a result, the experts came to a sad conclusion that the actual development of the Russian Far East is determined by China's economic expansion rather than by the Federal Targeted Programme²⁰.

One can only hope that after the approval of the new Strategy and the updated Federal Targeted Programme the situation will change, and necessary pre-requisites for effective cross-border environmental cooperation will emerge. Experts believed that the lack of a consistent development strategy of the Russian Far East com-

¹⁸ See: www.programs-gov.ru; http://fcp.vpk.ru/cgi-bin/cis/fcp.cgi/Fcp/Title/

¹⁹ Golobokova, Ya. Strategy 2020: Regional Dimension. Vlast, 2008, 12, p. 139; Amur-Heilong River Basin. Ed. by E. Simonov & T. Dahmer. Hong Kong, 2008, p. 290.

²⁰ Amur-Heilong River Basin. Ed. by E. Simonov & T. Dahmer. Hong Kong, 2008, p. 290.

parable to the Chinese plan for Northeast China was one of the main obstacles for the development of such cooperation.

Now we turn from national-level strategies and federal programmes to the level of individual Russian regions (so called “federal subjects”) comprising the Russian Far East. In the recent years each of them has prepared a development programme or strategy of its own. We will see to what extent these programmes take into account environmental factors, and what environmental issues are considered the most significant²¹.

Khabarovsk Kray

The Strategy of the Social and Economic Development of Khabarovsk Kray till 2025 was approved by the Decree of the Khabarovsk Kray Government dated January 13, 2009 No.1-pr. The main objective of the Strategy is the formation and development of a highly competitive regional economy within the respective environmental constraints²².

Weaknesses or threats identified in the context of a SWOT analysis include the following:

- inefficient use of the natural resource potential;
- dramatic increase in the probability of environmental and natural disasters, in particular, associated with the growing transboundary pollution in the Amur River Basin and forest fires.

The Strategy defines the following three environmental priorities of the regional development:

- creation of a system of measures ensuring not only reproduction of terrestrial and marine biological resources, but also conservation and restoration of natural landscape, which is particularly relevant to minority indigenous communities;
- integrated amelioration of agricultural landscapes and conservation of natural landscapes that can be used for tourism and recreation;
- formation of a system of measures to reduce human impacts on the environment (water and air pollution, soil contamination), in particular, by means of sound waste management, and to control the impacts of natural disasters (floods, forest fires) etc.

In addition, the Strategy mentions a well-known transboundary issue:

“The addressing, on the government level, of the international environmental issue associated with transboundary pollution of the Amur River — the largest transboundary river of Eurasia — is of particular polit-

ical and social significance to the environmental security of the Russian Far East. According to the agreement between the governments of Russia and China on cooperation in the field of environmental protection and rational management of transboundary water resources dated January 29, 2008, the parties assumed an obligation to take measures on the abatement of transboundary environmental pollution. While China has been implementing a USD 1.9 billion programme for environmental remediation of the Sungary River, the largest Amur tributary, no comparable measures are taken on the Russian side”.

In order to address the issue, the Strategy suggests to improve the monitoring of transboundary environmental pollution, defining the following specific objectives:

- further develop Russia-China transboundary monitoring of the water quality, bottom sediments and fish by expanding the range of indicators measured;
- establish new posts for monthly observations at Amurzet village (in Jewish Autonomous Oblast, upstream of the Sungari River mouth) and Nizhnenlenskoye village (in Jewish Autonomous Oblast, downstream of the Sungari River mouth);
- establish a new permanent observation post at the Russia-China border, on Bolshoy Ussuriysky Island.

Jewish Autonomous Oblast (JAO)

The Strategy of Socio-Economic Development of the Oblast for the Period till 2020 was approved by the regional government’s Decree dated December 23, 2008 No. 394-pp. This extensive document (some 500 pages) pays surprisingly much attention to environmental priorities and concerns (at least compared to similar documents of the neighbouring Russian regions)²³.

One of the key Strategy principles is the **maximum level of nature protection** — granting permits for the extraction or harvesting of natural resources only on the condition of the use of state-of-the-art environmentally sound technologies. This will also require designing and implementing integrated programmes to monitor environmental safety of operations and amending the existing legislation on compensation for environmental damage.

The general feature of the regional development with regard to the environment is described as “unbalanced natural resource use” — a language already familiar to us and commonly used across the Russian Far East. The Strategy authors believe that Jewish Autonomous

²¹ It is worth noting that not all documents of such kind are easily accessible at the moment, which makes it difficult to carry out a comprehensive analysis across all federal subjects of the region.

²² <http://www.fipa.khv.ru/info/strategy/>

²³ http://www.eao.ru/state/economy/strategy_2020.rar

Oblast can serve as a kind of a regional pilot area for the development of approaches to the assessment of issues at the intersection of natural factors and human activities, since the JAO is characterised by a number of patterns and features typical to the Russian Far East, including:

- combination of generally undeveloped areas with compact urban clusters;
- combination of well-preserved unique natural ecosystems with a disastrous condition of most watercourses;
- significant decline of industrial output combined with an increased content of hazardous substances in industrial emissions and wastewater;
- the lack of an effective environmental monitoring system, redundancy in the activities of different supervisory agencies, a significant contribution of secondary and transboundary pollution combined with difficulties of tracking these types of pollution.

Significant and persistent pollution of surface water bodies is viewed as one of the main environmental challenges faced by the region. It is important to note that transboundary pollution of the Amur River caused by pollutant discharges on the Chinese side is considered the most significant environmental threat. The Strategy authors believe that the environmental situation in the Amur River Basin is deteriorating and in the nearest future may reach a disastrous level. Therefore international cooperation of the JAO is focused on addressing environmental issues within the Amur River Basin. Measures on the monitoring of the Amur water quality are included in “The Environment of the JAO” regional targeted programme on an annual basis. One should note though that the level of the programme funding (e.g. RUB 1870 thousand in 2009) looks insufficient, to say the least. The regional government participates in the activities of the Amur River Basin Coordination Committee on Sustainable Development and provides financial support to the Committee.

Another pressing environmental issue faced by the JAO are waste landfill. More than 90% of all region’s landfills are illegal municipal solid waste dumps located within communities or in their immediate vicinity. Up to a half of all dumps are located on agricultural land — pastures, hayfields, arable land. Official permanent waste disposal facilities do not have any means of protecting the environment. The infrastructure of all landfills does not comply with the existing sanitary standards.

The document also lists many other threats to the regional environment (forest fires, floods, parasitic diseases of animals). However, the main environmental threat as seen by the Strategy authors is the disruption

of the regional environmental balance as a result of the development of the mining and metal industrial cluster. The authors recommend promoting certification of businesses in accordance with international environmental standards as a measure to reduce this kind of risk.

It is characteristic that another factor of the regional environmental deterioration explicitly mentioned in the Strategy is China’s policy aimed at promoting imports of raw materials and low value-added products, which may lock the JAO in the role of a raw materials producer for a long time. Overall, foreign investments “pose a threat to the social and environmental security of the region, since foreign investors put priority on the profitability of their investments, which results in a failure to comply with the established environmental standards and constraints”.

It is important to note that the base development scenario discussed in the Strategy implies for “the strengthening of constraints to growth associated with environmental factors”.

The document includes a rather extensive action programme aimed at “creating favourable environmental conditions for the population of the Far East” and “ensuring safe living environment for the population”. The first and the most important short-term objective is defined as “the development of measures for eliminating threats of transboundary pollution and for environmental remediation of the Amur River Basin, and incorporation of those measures into the Federal Targeted Programme ‘Economic and Social Development of the Russian Far East and Transbaikalia for the Period till 2013’ and in the draft federal programme ‘Clean Water’”.

Thus, from the analysis of development strategies of two different federal subjects of Russia it is quite clear that the issue of transboundary water resource management or, more broadly, natural resource management is seen by regional politicians as one of the largest, if not the largest, environmental challenge for the years to come. Therefore, if the current policy of openness of the economy persists, the federal subjects of the Russian Far East will inevitably engage in increasingly close cooperation with the Northeast provinces of China.

In order to reverse the trend of growing pollution of transboundary and border rivers, it is necessary, in addition to general declarations of concern, to adopt common water quality standards for border regions of the two countries to begin with. As for the model of cross-border economic cooperation, the existing “resource harvesting focus” of the economy of Russian border regions, called “colonial development model” by some experts³², will inevitably persist in the foreseeable future. This is proved both by China’s own plans for the

development of its Northeast provinces and by recently approved programme of cooperation between border regions of the two countries.

Northeast China

Since the natural resource crisis in Northeast China became obvious, the Chinese Academy of Engineering undertook a strategic assessment of the resource base of the region and prepared recommendations for ensuring sustainability in implementing the Programme for Revitalising Old Industrial Bases of Northeast China. The recommendations were discussed by government authorities, approved by them and can be viewed as strategic objectives of the Northeast China development for the period till 2030 and beyond. This period may seem long, but one should keep in mind that it took only a century of development (with significant engagement of foreign entities) to turn almost pristine region into an area bordering on the environmental crisis. Nowadays Northeast China is a region where 45% of forests are stands too young to be harvested, where large rivers are too polluted to be used as sources of drinking areas, where extensive plains with drying wetlands suffer from the effects of poor development practices and are hit by floods increasingly often. Despite all these issues the region is considered as relatively rich in natural resources compared to other parts of China, and Chinese experts view the current “crisis” as a result of poor resource management practices rather than intrinsic resource constraints.

According to WWF experts, the main drawback of these recommendations stems from the fact that the experts neither intended to consider sustainability issues from the perspective of a transboundary basin shared by three countries (China, Russia, Mongolia), nor were tasked with such consideration. Therefore potential impacts of the development of Northeast China on the environment of border regions of the neighbouring countries were simply ignored.

Despite some scepticism expressed by experts, one can state that, compared to development strategies of the neighbouring Russian regions, China’s programme of revitalising old industrial bases looks much more sound. It is a comprehensive multi-aspect strategy of internal economic development. Its international component is focused mainly on ensuring access to natural resources of the neighbouring country, and nothing else could be expected from China’s government with regard to consideration of transboundary environmental issues.

As for internal aspects of the Northeast China development, the **Plan of Revitalising Northeast China** for the 11th Five-Year Planning Period (also including certain targets for the year 2020), developed under the aus-

pices of the National Development and Reform Commission has an extensive and rather specific environmental component²⁴. For example, Section 7.3 “**Ecology and Environmental Protection**” reads as follows:

“We must do a good job of ensuring environmental conservation in mining districts in the vicinity of ‘resource-based’ cities... Relocation of residents living in mining-induced subsidence areas must be carried out when appropriate, and locations with potential geological hazards, such as open-pit mines, waste landfills, etc. must be treated appropriately. ...Take measures to tackle the issue of decreasing water level and soil salinization and alkalisation as a result of oil extraction; carry out land reclamation at abandoned mines.

“We must increase expenditures on tackling desertification and land degradation, continue activities on afforestation and protection of natural vegetation”.

It is interesting to note that the document contains both broad imperatives and specific targets:

“We must promote energy saving, emission reduction and environment protection. In particular, we must implement water pollution prevention programmes for the Songhua River and the Liao River, enhance the protection and treatment of drinking water sources used by large and medium-sized cities with centralised water supply, increase the rate of urban sewage treatment to over 70% and municipal waste decontamination rate to over 60%, improve the industrial pollution prevention system, promote the installation of desulphurisation units at power plants, and increase the industrial water recycling rate to over 90%... We will actively promote the recycling economy. Pilot projects aimed at the promotion of industrial recycling should be initiated by businesses, industrial parks and governments, with a focus on energy, raw materials, industrial equipment manufacturing and agricultural products processing sectors.

There are two annexes to the environmental section of the Plan, one of them being titled “**Priorities of Environmental Development in Northeast China**”. The priorities listed there include:

Measures with regard to Kerqin Sandy Lands: to create an environmental belt preventing the expansion of sands; to build an integrated forest-grass-pasture environmental and economic system; to prevent the decline of coniferous forests and implement water conservation and storage projects and soil conservation projects in arid areas.

Measures with regard to sources of sandstorms in Beijing and Tianjin areas: to contain and protect lands affected by desertification; to plant forests and brush as a means of protection from sand and wind; to contain the growth of pasture lands, and implement migration programmes.

²⁴ The full text of the Plan was published in Russian in the journal *Spatial Economy* (*Spatial Economy*, 2009, 1, pp. 62—123). The environmental sections are found on pp. 89—94.

Measures in black soil areas: to strengthen activities on the prevention of soil erosion; to improve the system of windbreak tree belts protecting farmlands; to restore vegetation in grasslands; to improve the fertility of black soil; and to prevent water pollution associated with surface runoff.

The priorities also include the **protection and development of natural forests, and measures to protect grasslands** (mainly in inner Mongolia), including more active measures to address problematic grasslands, transformation of traditional modes of grazing, creation of highly productive artificial grasslands and fodder bases, and promotion of indoor cattle feeding.

Other priorities include **environmental remediation in mining areas** based on combined engineering and biological approaches, and comprehensive waste treatment in order to stop soil erosion. The Plan also mentions measures **to protect wetlands and biodiversity** of the Sanjiang and Songnen plains, and **to protect marine environment**, including pilot projects on marine environmental restoration.

The second annex to the environmental section of the Plan addresses priorities of **environmental protection, including protection from environmental pollution, in Northeast China**. Here, the key priority is the protection of water resources, in particular, protection and enhancement of the quality of drinking water sources, which requires establishing clearly defined protection zones of water sources.

Water pollution control in the Liao and Songhua River basins provides for the development of cleaner production, accelerated construction of municipal effluent and waste treatment plants, the promotion of water recycling practices, improvement of the waste management system in large-scale livestock and poultry farming, and control of nonpoint source pollution associated with agriculture.

As for **air pollution control at the regional level**, the Plan pays particular attention to the desulphurisation of emissions of coal-fired power plants, and motor vehicle emissions control. Urban clusters in the central part of Liaoning province are viewed as a priority area for these measures. Pollution control targets should be defined for each city. Projects for the conversion or relocation of heavy polluting industries located in densely populated urban areas should be initiated.

Section 7.4 of the Plan for Revitalisation deals with **the efficient use of natural resources**.

With regard to **land resources**, it is planned to strengthen the protection of farmlands, prevent the sprawl of land under construction, and promote land reuse. The Plan also provides for remediation and reuse of lands in

abandoned mining areas, heavily salinized lands, and lands in coastal area. A standardised system for leasing land for commercial activities will be introduced.

As for **water resources**, inter-regional water transfer projects and projects to improve water supply of cities will be implemented. Medium and large reservoirs will be created as a means of flood control. The Plan briefly mentions the use of water-saving irrigation technologies and envisions that the recycled water utilisation rate in the region will exceed 20% by the end of the 11th Five-Year Plan Period.

Turning to more specific measures on water resource management, one should note that Annex 12 lists numerous large-scale engineering projects to be implemented in Northeast China. They are divided into two main categories:

Water transfer and storage projects. These include the completion of water transfer projects at Dahuofang, Xishan, and Sanwan reservoirs; construction of Lao-longkou Dam and the second phase of Taoshan Dam; completion of preparatory works for the construction of Hadashan Reservoir; water transfer project from Songhua Reservoir to supply urban clusters of Jilin province, from the Nen River to Baicheng City, a project to improve water supply of Dalian City etc.

Projects in the areas of artificial irrigation. It is planned to complete the expansion of Nirji water storage project intended to support water transfer from the Nen River. It is also planned to make preparations for large-scale irrigation projects in the valleys of the Sanjiang, Songnen and Liao Rivers and launch those projects when appropriate.

As for **ore resources**, China, while actively exploring a range of import opportunities, still recognises the need to have an internal “safety cushion”. Therefore it is planned to expand prospecting activities for oil and natural gas in Songnen Plain, and for nonferrous metals, precious metal, groundwater deposits and other important non-metal resources in Daxinganling and Xiaoxinganling (Greater and Lesser Khingan) Mountains and Changbai Mountains. A pilot project on the integrated development of iron-boron mining will be initiated in Wengquangou District of Fengcheng City (Liaoning province).

With regard to **forests and grasslands**, the key policy principle is that “forest areas should be restored at a faster rate than they are harvested”. Priority objectives include establishing strategic national reserves of commercial timber, ensuring rational use and protection of natural pastures in Hulunbeier and Xilinguole, etc., and restoring productivity and ecosystem functions of grasslands.

Plans with regard to **marine resources** include the development of off-shore oil and gas production, generation of thermal energy, and production of various chemicals from seawater. The development of aquaculture in shallow sea waters should not exceed the carrying capacity of the marine environment. The extraction of sea sand should be limited in order to protect ecosystems of coastal areas.

Overall, the approaches of the Plan of Revitalising Northeast China to many types of biological resources are based on the extremely important principle of maintaining a dynamic balance between resource consumption and restoration. This is a clear indication of an ecosystem sustainability focus of Chinese regional development plans. The Plan also extensively addresses the need to ensure the overall sustainability of the development.

Programme of Cooperation between the Border Regions of Russia and China²⁵

Compared to the Plan of Revitalising Northeast China, Section IX of the Programme of Cooperation between the Regions of Far East and East Siberia of Russia and Northeast China for the period 2009–2018 (hereinafter — the Programme 2018), dedicated to environmental cooperation between border regions of the two countries, looks much less specific.

The Programme in a very general way declares the need for cooperation between the governments of the respective Russian regions and Chinese provinces. At the same time the document outlines a number of important areas of activity, including: joint monitoring of the air quality, the quality of surface waters and the state of biological resources; creation of joint protected areas in order to ensure the conservation of ecosystems of transboundary water bodies; exchange of cleaner production and waste management technologies; and exchange of environmental protection specialists.

The Programme 2018 does not contain more specific environmental measures. Therefore it is clear that, while there is some similarity between general environmental priorities of Russia and China, the main challenge will be to find mutually acceptable approaches to all specific cases of transboundary natural resource use, and to identify environmental protection measures within the framework of every joint economic project.

The analysis of the Programme as a whole, with all of its two hundred specific projects, makes it obvious that in Russia it is planned to develop mainly resource harvesting or low value-added processing operations, while

projects to be implemented in China generally deal with end product manufacturing. For example, some 60% of 87 projects to be implemented in the Russian Far East involve resource harvesting or basic processing of raw materials. At the same time, of 125 projects to be implemented in Northeast China only some 15% can be considered having a resource focus (and most of these projects involve resource processing rather than harvesting). The other projects involve manufacturing of various products, often using high technology, sometimes — with a clear environmental focus. Some examples include lime manufacturing with low emissions of nitrogen oxides in Anshan, manufacturing of environmentally safe plastic tubes in Liaoning province, and manufacturing of a new generation flu vaccine in Dalian.

The only type of specific environmental projects in Russia (in a broad sense of “environmental”) are several advanced wood processing projects planned almost in every region of the Russian Far East.

As for joint ventures or projects created or implemented in the previous years, there are not much examples of those giving rise to win-win environmental solutions. No specific attempts to achieve mutual understanding in the planning of joint natural resource management and environmental protection are made, although the need for such common understanding has been often emphasised at various forums and at the highest levels of the Russian government. In particular, Vladimir Putin, Russian Prime Minister, mentioned environmental challenges among the issues, which simply cannot be resolved unless Russia and China develop a common view of them²⁶.

As for specific issues, one of them was emphasised in late 2009 by Sergey Shoygu, Russian Minister of Emergency Situations, who urged the two countries to adopt a common international water quality standard. According to his opinion, transboundary differences in what is considered “polluted water” result in a different level of emergency response on the two sides of the border, like during benzene contamination of the Sungari River in 2005²⁷.

So far experts’ conclusions have been disappointing: “The two nations are not prepared to face environmental pressures resulting from their economic development, and are much less prepared to take into account environmental impacts when planning future activities. If this continues unchecked, economic growth will accelerate environmental degradation. The outcomes are unimaginable given that even today some wild rivers are undrinkable and some wild fish

²⁵ http://www.minregion.ru/activities/international_relations/data_base/293.html

²⁶ <http://www.rg.ru/2009/10/14/gaz.html>; <http://www.premier.gov.ru/events/pressconferences/7892/>

²⁷ <http://www.rg.ru/printable/2009/11/25/voda.html>

inedible”²⁸. Where there are joint transboundary economic development plans in place, they are viewed as “environmentally destructive”. An example is the infamous Joint Russian-Chinese Comprehensive Scheme for Water Resource Management in Transboundary Sections of the Argun and Amur Rivers.

An interesting example of a local environmental issue turning into a subject of political games between China and Russia played at different levels is so called “Argun crisis”. Since the beginning of 2007, China has been allocating significant funding for river cleanup projects, at the same time planning a project for water transfer from the Argun (Hailar) River to the Dalai Lake, which would inevitably have a major adverse impact on the river ecology on the Russian side. Concerns voiced by environmentalists and local governments met harsh responses from China; the country stated that it considered Argun an internal river and did not find itself obliged to inform Russia of the respective plans. At the same time, a process of drafting a new agreement on the use and protection of transboundary waters was progressing at the highest levels of government. Russian politicians turned out to be much less flexible than their Chinese counterparts, trying to address the issues of river pollution and protection, being already addressed by China itself, but ignoring the emerging issue.

In summer 2008, China National Gold Group started the construction of a water pipeline from the Dalai Lake, a move contradicting the Ramsar Convention on wetland protection. Only a year earlier China was convincing Russia that the transfer of one third of Argun flow was intended to “save the ecology” of the unique lake, while underlining that the whole project was an entirely internal matter of China. But the implementation of the water transfer project was not started, and there was a hope that the neighbours changed their mind. As it turned out, they did not, but decided to start in a different way — withdraw even more water from the lake to make the water transfer project look better justified. At the same time, the government of Inner Mongolia Autonomous Region (China) suggested the government of Zabaikalsky Krai to stop regular meetings on the protection of water and landscapes of the Argun basin, stating that these issues are addressed at the level of the joint Environmental Subcommittee. Attempts were made to attract public attention to positive developments in the field of water monitoring, and to the creation a new protected area in the Argun floodplain.

In summer 2009, Ravil Geniatulin, the Governor of Zabaikalsky Krai, asked Yuri Truntev, Russian Minister of Natural Resources and the Environment, and Sergey Lavrov, Russian Foreign Minister, to find an opportunity to promptly check the information about the beginning of the construction of a canal between the Argun

River and the Dalai Lake. If this was confirmed, the governor asked to raise the issue at the upcoming summit between Russian President Dmitry Medvedev and Chinese President Hu Jintao. The fact of the construction was confirmed, but the issue was not raised during the summit, at least in any significant way.

In September 2009, China started to transfer water from the Argun River to the Dalai Lake. While Russian environmentalists were ringing alarm bells, heads of the Russian and Chinese governments highly appreciated the results of environmental cooperation between the two nations on 2009. In particular, it was noted that the project for the creation of a protected area in the Argun Basin, a future part of the international Daurian Reserve was making a slow but steady progress. Meanwhile, as a result of a high precipitation level, by the end of the year the water level of Argun, despite the commissioning of the Hailar (Argun) — Dalai canal, reached the highest value compared to the previous drought period, which lasted from 2002 to 2009. Russian federal and regional officials seemed to sigh with relief, hoping that they would not have to demand China to stop the water transfer. Minister Trutnev and Governor Geniatulin are busy establishing the protected area in the Argun basin. At the moment the situation seems to be resolved. Is this true, and wasn't the rising of the Argun water level a short-term phenomenon masking the actual impact of the water transfer on the river? Only the future will tell.

²⁸ Amur-Heilong River Basin. Ed. by E. Simonov & T. Dahmer. Hong Kong, 2008, p. 287.