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Published in:
Sustainable Development

DOI:
10.1002/sd.1542

Publication date:
2014

Citation for published version (APA):
Crotty, J., & Hall, S. M. (2014). Environmental Awareness and Sustainable Development in the Russian Federation: Environmental Awareness in the Russian Federation. *Sustainable Development*, *22*(5), 311-320. https://doi.org/10.1002/sd.1542

Please cite as

Crotty, J & Hall S M (2013), 'Environmental Awareness and Sustainable Development in the Russian Federation', *Sustainable Development*, DOI:10.1002/sd.1542.

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Abstract:

Drawing on empirical research from a qualitative study in the Russian Federation, this paper contributes to the limited academic literature on environmental awareness and sustainable development in Russia. Using data from nearly one hundred interviews with firms, NGOs and environmental regulators, we explore current barriers to public environmental awareness and the avenues to sustainable development, in the context of a transition country. We conclude by calling for further research that investigates the possibilities for environmental education and sustainability in contemporary Russian society and the institutional barriers thereto.

Key Words: Environment; Sustainable Development; Awareness; Russia

Introduction

Almost immediately after the Soviet Union collapsed, a 1993 poll revealed that 88% of Russians rated environmental quality as poor (Henry and Douhovnikoff, 2008). Between 2001 and 2007 approximately 60% of Russians perceived a decline in environmental quality, yet only 9% felt that it was Russia's 'most pressing problem' (Henry and Douhovnikoff, 2008). In 2008, another study reported that 78% of Russian respondents were personally concerned about the environmental situation, yet 57% did not feel that they were able to participate in action to resolve environmental problems (Henry, 2010). Russian people are evidently concerned about environmental quality, but this concern is not linked to action or priority. To date, there have been few attempts to explain this lack of environmental concern amongst citizens within the Russian context. Thus, in this paper we explore this disconnect by revealing levels of awareness, knowledge and action regarding the environment. We do this by taking a novel approach: exploring how this issue is perceived by key actors – from Russian environmental NGOs, firms and regulators – and highlight the implications for Russia's sustainable development.

Western environmental thinking has, by and large, ignored the influence of cultural factors on Russia's sustainable development status (Oldfield and Shaw, 2002). Moreover the research that has been conducted on environmental awareness in transition countries has focused more on formal education and less on public awareness, public knowledge or action regarding the environment (Blinnikov and Lindsey, 2010; Kasimov *et al.*, 2005; Pavlova, 2009; Verbitskaya *et al.,* 2002). Yet understanding the level of public awareness vis-à-vis the environment is crucial if Russia, with its population of 142 million and damaged natural environment (Bostrom *et al.,* 2006), is to develop sustainably.

In this paper we utilise data from interviews with key actors in three provincial, industrialised Russian cities (collected as part of a larger project on sustainability and state-society-business relations in Russia), to attest to perceived levels of environmental awareness and action amongst the Russian public. In doing so, we present findings almost unique within the literature on the social and economic transition in Russia, as we provide a window on levels of environmental awareness and the resultant limits on sustainable development in this transition setting.

To do this, we analyse the findings from nearly one hundred interviews with Russian firms, environmental regulators and environmental NGO's, regarding the perceived awareness of public knowledge and action regarding the environment. In so doing we aim to provide a foundation from which other scholars, particularly those conducting further research into environmental awareness, education and sustainable development within the Russian Federation, may draw and build upon.

Public Awareness, Environmental Education and Sustainable Development in the Russian Federation

There is a presumed link between environmental education, public awareness of the environment and sustainable development (Holt and Barkemeyer, 2012). According to Sauvé (2005, 29), 'the ideology of sustainable development, which gained popularity during the mid-80's, gradually penetrated the environmental education movement and asserted itself as a dominant perspective'. Education has also been identified as a 'prerequisite' for sustainable development, 'for dealing with the problems of the future survival and prosperity of mankind' (Kasimov *et al.*, 2005, 49; Kopnina, 2011). Likewise, Finger and Verlann (1995, 503) suggest that 'either we learn our way out or the quality of life on this planet will continue to deteriorate past any point of restoration'.

In the Russian Federation, the political and economic reforms of the last twenty years have had a dramatic impact on citizen's attitudes towards the environment (Farmer and Farmer, 2001; Huffman and Rizov, 2010). Such changes have created a social climate in which sustainable development and environmental education are second to economic stability and falling living standards (Henry, 2010). Thus the precarious socio-economic conditions under which many Russians currently live (Gooch, 1995) is central to understanding sustainable development in Russia.

Russia is a country polarised by rich and poor (Golenkova, 1999), where the incomes of the richest 10% of Russians exceed the poorest 10% by 12.7 times (Klyuev, 2009). At the same time, the Russian economy is the eleventh largest in the world (World Bank, 2010) and one of the most energy intensive (Kostin, 2010). Russia's GDP per unit of energy use and CO_2 emissions illustrate that 'even the significantly downsized post-Soviet economy is not yet environmentally sustainable' (Kostin 2010, 332). Russia is also infamous for its environmentally harmful activities (Udachin *et al*., 2003) and ecological disasters, including the desiccation of the Aral sea, Chernobyl and widespread water and air quality problems arising from intensive industrialisation (Verbitskaya *et al.*, 2002). Other factors such as citizen's attitudes towards the economy and common goods (Gooch 1995), a lack of trust for the state and elites (Crotty, 2003) and an impotent third sector (Crotty, 2009; Farmer and Farmer, 2001) also impact Russia's approach to sustainable development.

In addition, the majority of the literature on environmental education paints a bleak picture; highlighting the challenges in this field, including the low prestige of teaching as a profession, and out-of-date and expensive reading materials (Blinnikov and Lindsey, 2010; Kasimov *et al.*, 2005; Pavlova, 2009; Verbitskaya *et al.*, 2002). However, these studies centre on analysing, measuring and evaluating current forms and impacts of formal environmental

education in Russia, mainly using survey techniques (Gilmiarova *et al.*, 2000; Kasimov *et al.*, 2005) and/or secondary sources (Pavola, 2009; Verbitskaya *et al.*, 2002). There is a noticeable lack of in-depth research using narrative, qualitative methodologies, involving participants outside of formal education or research that examines informal approaches to environmental awareness. Moreover countries in transition, such as Russia, may offer novel insights into the relationship between environmental awareness and sustainable development, given the heightened tensions in such contexts between economic growth and environmental management (Kasimov *et al.*, 2005), and thus add new and challenging interpretations of what sustainable development is and how it can be achieved (Oldfield and Shaw, 2002). So in this study rather than examining the content of environmental curricula or seeking the opinion of educators, we instead seek the opinions of key actors within Russia and their perceptions of environmental awareness and action within the population. We do so both to address this gap within the extant literature and to provide a foundation on which other sustainability scholars can build. Before we do so however we turn to the research methods employed.

The Research Study

It is widely accepted that Russia's two major cities, Moscow and St Petersburg, are not representative of provincial Russia as a whole (Kuznetsov and Kuznetsova, 2003). As Blinnikov and Lindsey (2010, 215) explain, 'Moscow is home to the oldest and best-known naturalist programs', and therefore is not representative of environmental attitudes across Russia as a whole. Taking this into account, and wanting to explore the level of environmental awareness that might be applicable across a greater number of cities than just Moscow and St Petersburg, this study focused on industrial cities in provincial Russia. Consequently, the data presented in this paper, collected as part of a wider ESRC-funded

research project, emanates from three provincial cities; Samara Oblast', Volgograd Oblast' and Stavropol Krai.

Samara Oblast' was chosen as a site for the study due to its status as a typical industrialised Oblast outside of Moscow and St Petersburg (Crotty, 2009; Hanson, 1997). Containing the key cities of Samara, Novokuibyshevsk, Syzran and Tol'yatti, Samara Oblast' has become a centre of moderate prosperity and also has an active environmental movement (Crotty, 2003). Volgograd Oblast' has a similar economic profile to Samara. Here, economic activity is concentrated in the region's two largest cities, Volgograd and Volzhskii, with leading industrial branches in chemical production, metallurgy and oil refining. Stavropol Krai has a more mixed agricultural and industrial economic base, with industrial activity focused around the two cities of Budennovsk (oil refining) and Nevinnomyssk (chemical production).

Before embarking on the fieldwork, an initial 'wish list' of participants was drawn up using web-bases sources. Having arrived at each location, project partners at Universities in Samara, Volgograd and Stavropol then assisted in expanding this 'wish list'. A 'snow balling' approach was then used to engage further participants in this study, asking interviewees for potential contacts and so on. As a result, a total of 91 qualitative interviews took place with environmental NGOs (30), firms (38) and regulators (23) across these three regions. These interviews were all face-to-face and semi-structured. Commentary from the very limited literature on environmental awareness in Russia (Henry, 2010; Henry and Douhovnikoff, 2008; Oldfield and Shaw, 2002) and on the impact of environmental education on environmental awareness in Russia (Verbitskaya *et. al*., 2002; Blinnikov and Lindsey, 2010) were used to were used to shape both the base-set of questions and data collection methodology.

Senior enterprise managers, NGO leaders, regulators responsible for enforcing environmental legislation and elected officials participated in this project. Participants were questioned about their work, their role in the organization, the everyday functioning of the organization, issues surrounding environmental management and sustainability, and crucially their perceptions of public knowledge and action regarding the environment. Each interview lasted between 30 and 90 minutes and assumed a conversation-like approach, where the base set of questions were used to facilitate discussion alongside additional follow-up questions to probe responses and to add further insight. Where necessary, a translator was used to facilitate the interviews. Each interview was recorded with supplementary notes taken alongside. Interviews usually involved one member of staff from each organisation, although in a small number of interviews two participants were involved in the conversation.

Once back in the UK, all the interviews were transcribed and anonymised[i]. The interviews were subject to theoretical interpretation, based entirely upon the data collected, but with an appreciation of the context in which participants were speaking. Following the results of this analysis, the data was then coded according to emergent themes or categories (Charmaz and Mitchell, 2001), which revealed a number of key themes, including low public consciousness and environmental education. The discussion that follows explores these issues using narratives from these interviews and "illuminating examples" (de Vaus, 2001, 240) to illustrate key points. It is also useful to note that the Russian word '*ekologiya*', directly translated as 'ecology' is more commonly used to denote the natural environment as it relates to sustainable development, than the literal translation '*okruzhayushaya sreda*'. As a result the terms 'ecology' and 'environment' are used interchangeably by respondents throughout.

Findings

Public Environmental Consciousness

This section provides a first look at the reasons behind low public participation, as a crucial step to furthering discussions on sustainable development in contemporary Russia. We focus on three themes that emerged from the data: 'A Russian Mentality', 'No Interest in the Environment' and 'Uneducated Generations'.

A 'Russian Mentality'

According to participants from across the dataset, one of the main barriers to improving public awareness is a so-called 'Russian mentality' (Gilmiarova *et al.* 2000, 393, Gooch 1995). Contrary to Henry and Douhovnikoff (2008) and Henry (2010), who argue that Russian society is environmentally conscientious, participants regularly expressed that 'the level of ecological awareness [is] extremely low' (NGO 1.19), citing a specific Russian (political) condition as one of the main reasons. Interviewees from the firms, regulators and NGO's were often critical of the mentality of Russian people towards the environment: 'this is our curse - our undisciplined, disorganized people' (Regulator E). Citizens were described as lacking a 'sense of togetherness' (Ceramics Factory 1) and being 'indifferent' (NGO 1.9) to political issues:

> More and more of our people are becoming 'zombified' and becoming increasingly apathetic towards all social and political questions. This is a very dangerous situation. (NGO 3.5)

> No matter how hard we criticize the regime and recollect its role in the Civil War and in the Great Patriotic War, there was [an] ideology which helped people to understand that they needed each other. Now this understanding is missing. (Regulator I)

The language used by both participants above depicts a nation of people who were once united, but have since been paralyzed by dramatic economic and social change. The

description of Russian society as being fractured and citizens as apathetic, with an absence of interaction with the state, has already been identified within the literature (Crotty, 2003, 2009). This weak and 'immature' civil society in Russia would seem to have strong influence on public awareness of environmental issues, and social relations have become very inward looking (Crotty, 2006). As a result this Russian mentality, devoid of environmental awareness, was considered to be entrenched in society: 'the key civic stand, widely-spread within our society, is to avoid taking and bearing responsibilities' (Regulator W). The lack of responsibility felt by the Russian public was described as a part of their culture, the result of massive economic and political upheaval. This was manifest in having 'no interest in the environment'.

No Interest in the Environment

Interviewees described the Russian population as lacking care or concern towards the environment. As one NGO worker articulated, 'people are not ready to admit the rights of wildlife neither in our country nor in the world' (NGO 1.20). Developing public consciousness in Russia was thought of as being limited by the mind-set of the population and their lack of interest in environmental issues (Verbitskaya *et al.,* 2002). Regulators in particular explored the link between this lack of interest awareness and participation in civil society:

> Often people think that nothing depends on them and do not want to participate in this kind of activities, do not want to discuss […] they do not care about anything happening outside their door, they walk on dirty streets, kick garbage and after that they get back to their cottage houses, shut the door and think they are separated from the rest of the world. It's psychological. (Regulator B)

Here, low consciousness is explained in part by a resistance to learning about environmental problems, of being unwilling to listen to advice. Citizens are personified as self-interested, incapable of thinking beyond their own needs and desires. In the literature, this inability to express environmental concern is explained by the presence of other more urgent everyday pressures faced by Russian people (Gooch, 1995; Verbitskaya *et al.,* 2002; Henry and Douhovnikoff, 2008). Interviewees from firms also spoke about how 'there is no interest to the environment' (Chemical Factory 7), and that 'customers are not too bothered about the ecological standards of our processes and work at the enterprise' (Chemical Factory 3). There was a general feeling within the interviews that by getting to the root of this problem and changing people's attitudes, care for the environment could be restored (Dobson 2007).

A direct link was also made between low public consciousness and irresponsible behaviour. Interviewees spoke about Russian citizens having a negligent 'personal attitude', which could be evidenced by their environmentally-damaging behaviour, such as 'throw[ing] garbage on the streets' (Regulator G). Another participant pointed out that 'most of the problems are caused not by factories but by cars and city inhabitants, it's 70% practically' (Regulator N). If citizens, according to this participant, are responsible for the majority of environmental damage in Russia, then changing the attitude of the public is integral to improving environmental management. This concern towards the environment was also positioned as something that was expected: 'at any level a person should realize that he *should* care about the environmental protection' (Regulator G). However, as the discussion continues, encouraging citizens to care more for the environment was viewed as limited.

Uneducated Generations

Poor education was cited as a key reason for low environmental consciousness or awareness amongst Russian citizens (see Dobson, 2007; Huffman and Rizov, 2010; Kasimov *et al.,*

2005). As participants pointed out, 'previously very little attention was devoted to ecology' (Natural Resource Company 3) and 'research shows that people don't know anything about it' (NGO 1.12). Recent changes in education have led to 'uneducated generations' within Russia, of people that had received little if no formal education about environmental issues. This was a result of environmental education being removed from the school curriculum: 'approximately 10 years ago in 1998 the government adopted the decision that there is no need to teach ecology at secondary school' (NGO 1.1).[ii] The removal of environmental education from the Russian curriculum and the associated problems for environmental management was a cross-cutting theme within the data. This previous lack of formal education was perceived as central to the problem of low public consciousness, because 'everything goes through education' (Regulator A).

The impact of this lack of environmental education was also thought to go beyond individuals, to influence the practices of Russian firms and the state, as well as the 'specialists' within (Crotty and Hall, 2011):

> Enterprises are a kind of mirror reflecting the society, its constituent part. We have no ecological culture in the managing bodies, in the global meaning. (Regulator H)

> In Russia, nor in the USSR, none of higher educational institution could graduate specialists in environment management […] very often [state officials] approve such ill-considered projects simply because they are not specialists. (NGO 1.1)

The impact of this lack of education was described here as spilling over onto practices in industry and government, reflecting Gilmiarova *et al.* (2000, 394) who note that 'environmental deterioration is often the result of ignorance on the part of members of a given society and of company managers motivated solely by profit'. At the same time, whilst

critiquing this lack of education – or culture of education – firm-based participants also viewed the education of citizens as difficult to achieve: 'because some aspects are really difficult to explain to an average citizen, just an ordinary man' (Chemical Factory 5), admitting that maybe environmental education was something that was currently out of reach.

Improving Environmental Awareness

Respondents also pointed to ways in which environmental awareness could be improved. Three key themes emerging from the data concerning both formal and informal education: 'School Education', 'Home and Family', and 'Work-based learning'.

School Education

School education was cited by participants as the main avenue to educating Russian citizens about environmental sustainability, that 'we should teach kids in school' (Regulator B) and 'it should be fostered since school- [a] more caring attitude' (Automobile Factory 4). Starting citizens learning about the environment 'from an early age' (Regulator M) was another rationale for school based education, with an association made between schooling and youth (Rest, 2002). There was also a sense that young people were more impressionable, since 'new generations always learn quicker' (Regulator E) and are easier to mould. Participants presumed that educating young people at school would cause 'changes [to] the attitude of a society towards environmental problems and accordingly the way to solve such problems' (NGO 1.6).

Interviewees elaborated on their reasons for prioritising school-based learning as a suitable way of educating Russian citizens about environmental issues. The removal of environmental education from the curriculum was widely criticised by participants, describing it as a 'step backwards' (NGO 1.1). However respondents also spoke at some length as to how, in the

absence of the environment from the curriculum, the environment could be included in other ways. Lesson content was perceived as malleable (see Verbitskaya *et al.*, 2002), e.g. 'if it's a math task, it's about a mushroom. If it's a crossword, the names of Red Book plants are used' (Regulator C). It was thought possible to shape the curriculum toward environmental topics, providing students with a 'two-in-one' effect to their learning. Participants also widened the discussion to consider the role of different lessons within environmental education whilst championing the reinstatement of Ecology within the curriculum. Therefore the structure of in-school learning, in terms of subjects and lesson content, was regarded as conducive to providing education on environmental issues.

Organisations were also involved with schools and school children in a variety of ways, providing environmental education as part of their sustainable development programmes (Blinnikov and Lindsey, 2010; Blum, 2008). Firms spoke about 'holding seminars [and] tackling pervasive social problems through discuss[ions]' (Aluminium Factory 1), running excursions such as an 'Ecology Camp in Samara National Park' (Aluminium Factory 3) and 'sponsor[ing] children's competitions geared to improve patriotic education' (Natural Resource Company 1). Regulators discussed their position as 'members of the contest committee and [observing] how the environmental education is provided in schools' (Regulator C), and their role in information dissemination, such as 'hav[ing] prepared the program of ecologization of education in schools' (Regulator M).

Likewise, NGOs spoke about their involvement in environmental schemes with school children, such as 'operation *Primrose* [where] children made explanatory leaflets and put them in buses' (NG0 1.3) or holding exhibitions for school children with 'attendant activities, round tables, seminars, with special attention to young people' (NGO 1.7). Other NGOs had been involved in preparing teaching materials, including 'a thin brochure [containing] poems,

descriptions of the lakes, a call for saving them' (NGO 1.9) and issuing 'workbooks for the schoolteachers' (NGO 1.20). Yet despite their involvement in these school-based activities, participants recognised that environmental education was not solely located at school or formal institutions.

Home and Family

Alongside formal school-based education, participants noted the importance of informal approaches to environmental education (Hall, 2010). Ideas about upbringing and educating from a young age for future 'sustainable' generations (Rest, 2002) were central to these discussions. This focus on environmental awareness that pre-dates school education was advocated by a number of participants:

> Kids should be raised with the understanding of keeping garbage in one place. That's where the environmental protection begins, in my opinion. (Regulator G)

> If children, before they go to school, understand why it is essential to take care of nature, the rate of ecological problems may reduce. (NGO 1.16)

These interviewees indicate that pre-formal education experiences are integral to environmental awareness. There was a general understanding within the interview discussions that environmental awareness begins at home (see Hall, 2010).

The family also emerged as a potential source of environmental education (Jickling and Wals, 2008). In the extracts below, the participants make direct reference to the role of family members:

> Nowadays, the question of 'youth ecological upbringing' has become rather popular. Everything begins within the family, nearest friends, just from the early age. (NGO 2.3)

> Ecological education starts at an early age. A child is very vulnerable. It's important to instil it in the family. (Natural Resource Company 4)

These participants cited 'family' as an important source of education, charged with the responsibility for disseminating information to children about the environment. Although some participants made inferences to 'the role of society in the children's upbringing' (Regulator K), this was not something that was pressed very hard, perhaps because of the currently immature state of Russian civil society (Crotty, 2006) and the lack of interaction between civil society organisations and the public (Crotty and Hall, 2011).

Interview discussions also touched on the space or 'territory' of the home with regards to informing people about their locality. In so doing, the environment could be better managed:

> The first [stage of ecology] is one's own porch, the order of one's own house and the adjacent territory. This is the culture of communal living. This stage shows the person's education and good breeding. (Regulator I)

This extract illustrates the value of requiring citizens to be responsible for their immediate surroundings (Blum, 2008; Dobson, 2007; Gooch, 1995; Oldfield and Shaw, 2002). As Graybill (2007, 17) argues, 'effective management of environmental problems' requires an understanding of 'locally produced knowledge and values'. However, such a parochial and confined approach to environmental management was criticised, that people 'live in their 'small world'' (Regulator B), unaware of environmental damage beyond their immediate surroundings. Thus, aside from everyday problems such as poverty, spatial factors may result in environmental management being dismissed.

Work-Based Learning

The workplace was another site identified for improving awareness about sustainability (Haigh, 2006). Work-based environmental education, e.g. making staff more 'ecologically mindful of his/her actions and their consequences' was something firms took 'very seriously' (Metal Working Factory 1). Participants described how 'enterprises teach' (Regulator D) their employees about environmental issues, actively trying to increase awareness. This was regarded as 'a positive thing' (Regulator D), for 'if a company takes ecological management seriously, if ecologists' suggestions are listened to and accepted […] it will go a great way' (Chemical Factory 7). Some participants went so far as to describe environmental education as a 'responsibility' of firms, 'from description of job responsibilities, standards, everywhere, for any worker' (Regulator C). Another participant described educated employees as 'irreplaceable and [having] importance [in] the local and global industry' (Aluminium Factory 1). There is a sense, however, that by educating employees, a business will be more profitable, rather than this education being solely for the benefit of the environment (Crotty and Hall, 2011).

Additionally, some participants spoke about the need 'to invest money' in improving environmental awareness (Regulator R):

> We need to value and appreciate [employees], invest money into their education… If a company realizes these basic principles and verities, it will certainly come to the realization of the importance of ecological culture, fulfilling different environmental programs, creating facilities, providing with working and living conditions. (Chemical Factory 5)

Regarding the impacts of such investment, one interviewee explained that 'certain measures can be beneficial for future generations, their sons and grandsons' (Regulator N). Interestingly, all of the data presented in this subsection regarding work-place responsibilities

for environmental education derives from the Regulator and Firm interviews. NGOs were not vocal in these discussions, or regarding their responsibility to hold others to account (Crotty and Hall, 2011; Tang and Zhan, 2008). These findings suggest that, whilst formal routes of education are important for increasing environmental awareness, there are other means by which levels of awareness can be raised, broadening the scope to include home and work life. Who is responsible for providing such education is another contentious topic (Crotty and Hall 2011), although these findings suggest that a multitude of social actors are responsible, reflecting the various avenues by which such education can be provided. The next section will now go on to draw some conclusions from this rich findings section.

Conclusions

The findings indicate strong perceptions of low levels of environmental awareness by key actors within the Russian population. Russian citizens possess a certain 'mentality' which governs their ability to be environmentally proactive. Participants indicated that citizens have been paralyzed by dramatic economic and social change. They also exhibited a deep-seated belief that environmental concern was not the responsibility of the public (Crotty and Hall, 2011), fuelled by the legacy of the Soviet Union, where the state assumed responsibility for everything (Crotty, 2009).

A number of scholars have previously supported the notion that Russians *are* environmentally attuned, but that their stressful everyday lives leave little room for environmental concerns (Blinnikov and Lindsey, 2010; Haigh, 2006; Henry and Douhovnikoff, 2008). However, as shown, the situation is far more complicated. Participants in this study described the Russian population as lacking interest or care for the environment, which was conceived as an obstacle to environmental management and sustainable development. At the same time, poor education was cited as a reason for low environmental consciousness amongst Russian

citizens, resulting in a harmful combination of situational, personal and educational obstacles to sustainable development. Different educating bodies might also have different motivations in the environmental education they provide, for example for firms, raising environmental education may be more aligned with their business interests, such as saving resources and money rather than the environment. School education, and the curriculum, may also be more open to change, as a reflection of the political context and governmental influence.

Formal school education and workplace training are both recognised within the literature as central to educating the Russian population on the environment, with a handful of studies having previously explored this topic (Blinnikov and Lindsey, 2010; Gilmiarova *et al.*, 2000, Kasimov *et al.* 2005). However, upbringing and home life have been largely marginalised within accounts of environmentalism in Russia. The concept of upbringing was considered especially important to the participants in this research study, indicating that environmental education cannot be restricted to formal routes of education, but must instead permeate the everyday lives and mentalities of Russian people.

Likewise, whilst educating the youth is a prerequisite to a sustainable future, educating the future cannot be at the expense of educating citizens of today. Informal routes to education are needed for those who have graduated from the school system or do not receive training at work, such as by NGOs (Tang and Zhan, 2008). Environmental education also needs to take into account that Russian citizens may have strong links to their local environments, highlighting the need for a multi-scalar perspective within Russian environmental education. This paper has therefore contributed significantly to the limited set of literature and empirical research regarding environmental education in the Russian Federation.

Environmental education has been framed by the participants in this study as an essential means of educating Russian people about environmental sustainability. The broader literature

on sustainable development also suggests that, while environmental education and sustainable development strategies need be context-sensitive, it is necessary to account for both environmental and economic factors (Kopnina, 2011). This is particularly relevant for countries in transition, where economic and political instability is a relatively recent memory. Yet development in such regions remains to be compared to, and measure by, Western standards (Farmer and Farmer, 2001). Therefore, in order for Russia to become a sustainable society, environmental education needs to be sensitive to the particular economic, political and social context of this country in transition. Whether this can be achieved in the current political climate is debatable, leaving us to conclude that bottom-up sustainable development, emerging from the Russian population is unlikely to take place within the foreseeable future.

Lastly, further development of Russian environmental protection is crucial, particularly given the dismantling of state structures and the retreating of the state, which is evading its social and environmental responsibilities to the Russian population (Crotty and Hall, 2011; Klyuev, 2009). Considering that the findings in this paper have been founded on firm, NGO and regulator narratives, we have only started to disentangle these complicated discourses. What is missing are citizen's accounts of their environmental awareness and of environmental education in Russia, a key weakness of this paper. Thus further research is necessary in order to both explore citizens' perceptions of themselves vis-à-vis environmental awareness and action, as well as the institutional barriers within the Russian Federation that prevent environmental education, and thus sustainable development, from becoming mainstream. Comparative studies may also reveal the uniqueness or not of the Russian Federation with regards levels of environmental awareness and remedies therein. In the meantime evidence from this paper indicates that prospects for sustainable development in Russia at the current time remain weak.

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[i] Firms are referred to according an assigned pseudonym, indicative of their industry, such as 'Aluminium Factory 1'. Regulators have each been randomly assigned a letter, and so are referred to as 'Regulator A', for instance. Interviews with environmental NGOs in Samara Oblast range from 1.1 to 1.20; in Stavropol from 2.1 to 2.3; and in Volgograd from 3.1 to 3.7.

[ii] Since conducting the research for this paper it has since been announced that from 2011 Ecology will become a compulsory subject in Russian schools (Pavlova 2009).