

PAPER • OPEN ACCESS

## Spiral dynamics in the management of sustainable development of society

To cite this article: S Ivanova *et al* 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **915** 012039

View the [article online](#) for updates and enhancements.

You may also like

- [Nanomodification of mineral binders](#)  
V Derevianko, N Kondratieva, V Volkova et al.
- [Energy-efficient excavation of the soil of the lower track structure by bulldozers with a combined knife system](#)  
K Hlavatskyi, S Raksha and Y Gorbenko
- [Prediction of conditions of flange joints depressurization during the assembly of pipelines using technological and standard fastening elements](#)  
O V Bondarenko and A P Dzyuba



The Electrochemical Society  
Advancing solid state & electrochemical science & technology

242nd ECS Meeting

Oct 9 – 13, 2022 • Atlanta, GA, US

Abstract submission deadline: **April 8, 2022**

Connect. Engage. Champion. Empower. Accelerate.

**MOVE SCIENCE FORWARD**



Submit your abstract



# Spiral dynamics in the management of sustainable development of society

S Ivanova<sup>1</sup>, A Romin<sup>2</sup>, L Gaynutdinova<sup>3</sup>, S Kvitka<sup>4</sup>, V Paliukh<sup>2</sup> and I W E  
Arsawan<sup>5</sup>

<sup>1</sup> Oles Honchar Dnipropetrovsk National University, Haharina Ave, 72, Dnipro 49000, Ukraine

<sup>2</sup> National University of Civil Protection of Ukraine 94 Chernyshevskaya str., 61023 Kharkiv, Ukraine

<sup>3</sup> Herzen University, 48 Moika Embankment St.Petersburg 191186, Russia

<sup>4</sup> National Technical University " Dnipro Polytechnic", 19, Dmitry Yavornitsky Ave., Dnipro 49000, Ukraine

<sup>5</sup> Politeknik Negeri Bali, Kampus Bukit, Jimbaran, South Kuta, Badung Regency, Bali 80364, Indonesia

E-mail: skvitka14790@gmail.com

**Abstract.** The article discusses issues related to the implementation of the concept of sustainable development through the prism of the spiral dynamics approach. An example of sustainable models for the implementation of activities in the forestry area and considered inconsistencies in conceptual attitudes necessary to implement such an approach and in the vMems of today. The purpose of this study is consideration of the applied aspects management on the value-based change. As part of the study, an information and management scheme for the forestry industry has been developed, which allows you to see information in the process relationships. General recommendations for the management of values have been developed on a specific example of the forestry industry. Modern society requires specialists of a new formation, able to integrate spiral movements, ready to design new businesses and projects, taking into account the requirements of the 2nd level vMems.

## 1. Introduction

In modern society, achieving sustainable development is possible under condition of adequate management. However, for all the relevance of this topic, we do not see a global transition to smart governance and truly sustainable development. This is due, among other things, to the basic values that are characteristic of the modern world and its culture, as well as to the peculiarities of the usual paradigms built into the actions of people. One example of such development management can be an example of the implementation of sustainable activities in the environment and specifically in the forestry industry.

## 2. Related works

Issues related to the management of the period in crisis and transition periods have been studied many times. Accordingly, the features of management during periods of crises and changes in technological structures were developed in the works of E. Deming [1], K. Meyer and S. Davis [2], O. Sharmer [3],



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

P. Senge [4], A. Prigozhin [5] and others. An interesting complex work on the management of values and change is the book "Spiral Dynamics" by D. Beck and K. Kovan [6]. Issues that study the difficulties associated with changes in management paradigms are considered different angles of view in the works of J. O'Connor and I. McDermott [7], J. Barker [8], M. Syed [9], N. Taleb [10, 11].

### 3. Research results

The purpose is to consider the applied aspects of value management from the point of view of creating a base for sustainable development of society. As part of the study, the approaches of change management and quality management were used. Aspects of management were considered, that allows us to explore the values of the development of society [16-17].

Modern society is actively changing, as are its values. The concept of value is understood as a person's idea of the good at the level of ideals (absolute values) and ideologemes (applied values). Concurrently, different times will form different values and, accordingly, different types of thinking and behavior patterns [15]. Essentially, values are the basic elements of culture. By culture is meant a kind of artificial environment ("second nature"), which a person creates for a more comfortable life, having a kind of "defective communication" [12] with nature, is forced to create his own environment, which will form his own values, which in their essence and form the value content of the culture itself. Moreover, the culture of each era always contains a certain part of the culture of an earlier era.

In the terminology [6], this is provided due to the movement of so-called value memes (vMems) in the organizational environment.

Therefore, Don Beck and Chris Cowan [6] single out eight vMems and point to the origin of the ninth.

**Table 1.** Correlation between vMems and Cultures.

vMems 1st level	Characteristics	vMems 2nd level	Characteristics
Beige	Survival culture	Yellow	Culture of creativity
Purple	Culture of belonging	Turquoise	Culture of integrity
Red	Culture of strength	Coral	A culture of deep understanding
Blue	Culture of law		
Orange	Culture of result		
Green	A culture of collectivism of consistency		

Source: author's interpretation of materials by [6].

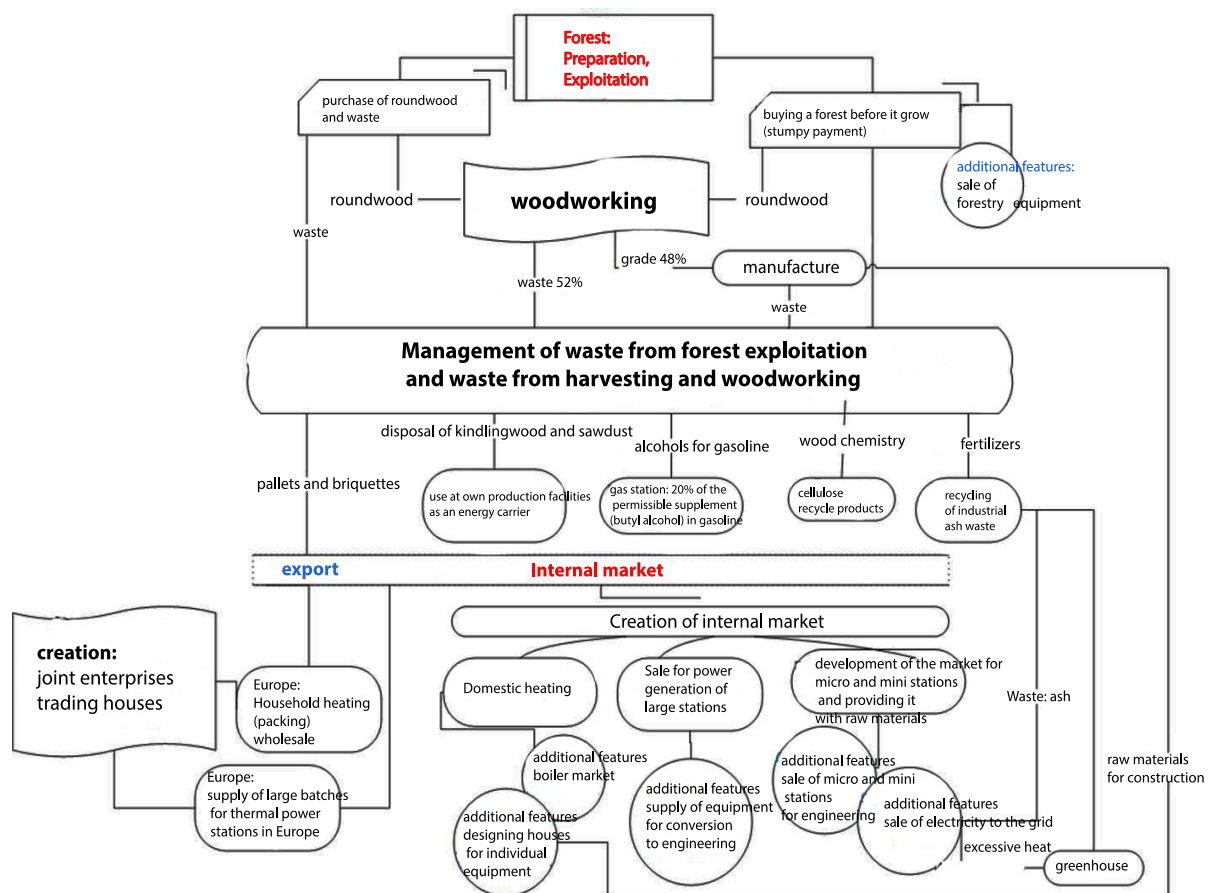
Sustainable development as the creation of adaptive mechanisms for the functioning of human society in a changing environment with minimal damage to the surrounding world and with the potential task of improving the already existing critical situation presupposes reliance on sufficiently developed level 2 vMems. These values assume the presence in society of a sufficiently flexible and mobile system of response and control, as well as a deep understanding of the actual connections between objects.

It is worth clarifying that the XXI century generates a stream of changes associated with the search for a path that will improve the condition of the world [18-19].

This is the search for alternative energy sources, and the search for opportunities for waste disposal, changes in the norms for emissions into the atmosphere, etc. But this search is often not based on needs that arise from actual conditions. Rather, this search lies in the area of populist political solutions, which naturally leads to critical failures in the operation of public systems (energy security problems, logistics problems, problems with lack of food, etc.).

There are a lot of reasons that provoke the emergence of such unstable mechanisms for regulating society. But one of the basic ones, in our opinion, is the discrepancy between the values that should and can be inherent in a society aimed at sustainable development and the existing values that are actually present in society and regulate it. So, for the development of the movement towards sustainability, it is necessary to develop yellow and turquoise value memes in a person and society, since the solution to the problems faced by humanity lies at the levels of the vMems of the first order. Moreover, in the modern world, it is precisely the vMems of the first level that become stronger and become dominant. For example, the fight against coronavirus has extremely intensified the red and blue vMems, and also exacerbated the beige vMems. It is worth clarifying that the strengthening of these values clearly does not serve the cause of sustainable development, rather the opposite. It provokes additional isolation and barriers to create sustainable development projects.

So, for example, if we take the timber industry, then part of its activity can be represented in the form of such scheme (close to the ideal state of the system) of work (Fig. 1).



**Figure 1.** Timber industry activity diagram.

Source: based on [9-10].

Sure thing, the organization of such work cannot be at the level of red and blue vMems. Unambiguously, to implement such an approach to forest exploitation, new thinking is needed, new approaches that allow us to see our activities globally through the harmonization of the relations of a huge number of people with the aim of a conscious and holistic vision of activities, which forms the approach of the most sparing impact on nature. We wrote about a similar approach earlier [13].

In fact, today the world is faced with a number of problems that lie in the area of inconsistency between the tasks facing society and the mental guidelines that are governed by the values of this society. The tasks that society must solve today lie in the field of the future and its values, and the actions that are implemented acceptable at the level of perception are in the past.

Moreover companies undertakings in the field of sustainable business development also raise a number of suspicions in society, because there are not so many carriers of new vMems in society, and the rest thinks that this is some kind of new trick or marketing ploy (which is also not uncommon) [6].

Considering the current situation, it is necessary to form a class of people capable of spiral integration. Such people should be able to recognize vMems in people, companies, communities, and be able to transform them to new levels. This means that it is necessary to learn to intelligently define the profiles of people, mental devices to see the actual conditions of life. Such people also need special training in the ability to work with information, which ensures the existence of a coherent environment [14], of our habitat. Precisely information, both strong and weak signals, allows us to notice that vMems are mobile: they come and go, they develop and dominate. They need to be managed by a goal in order to develop society and form its creative culture.

#### 4. Conclusions

The number of problems associated with the discrepancy between the tasks and capabilities of society is growing in the world. The basis of these inconsistencies, among other things, are contradictions in value orientations that are characteristic of a particular society. The solution to these contradictions is seen in the implementation of training programs for systems thinking and the formation of a critical mind capable of noticing changes in the system, and projecting new precise changes in them.

Effective reasonable management is possible when the values of a person of today are transformed and establish the values of the second order, which will make it possible to get closer to the sustainable development of society.

#### References

- [1] Deming E 2009 *Out of the Crisis: A New Paradigm for Managing People, Systems and Processes* (Moscow: Alpina Business Books) p 419
- [2] Meyer K and Davis S 2007 *Living Organization* (Moscow: Dobraya Kniga Publishing House) p 368
- [3] Sharmer O and Theory W 2019 *Leadership from the future* (Moscow: Mann, Ivanov and Ferber) p 512
- [4] Senge P 2009 *The fifth discipline. The art and practice of the learning organization* (Moscow: ZAO "Olymp-business") p 448
- [5] Prigogine A 2007 *Disorganization: Reasons, types, overcoming* (Moscow: Alpina Business Books) p 402
- [6] Beck D and Cowan S 2006 *Spiral Dynamics; Learning Values, Leadership, and Change* (US Depository)
- [7] O'Connor J and McDermott I 2016 *Artistic Thinking: Necessary Knowledge about the System and Creative Approach to Problem Solving* (Moscow: Alpina Publisher) p 256
- [8] Barker J 2007 *Paradigms of thinking. How to see new things and succeed in a changing world* (Moscow: Alpina Business Books) p 192
- [9] Syed M 2016 *The Black Box Principle: How to Turn Failure into Success and Reduce the Risk of Fatal Errors* (Moscow: CoLibri, Azbuka-Atticus) p 352

- [10] Taleb N 2015 *Black Swan. Under the sign of unpredictability* (Moscow: CoLibri, Azbuka Atticus) p 736
- [11] Taleb N 2019 *Foiled by Accident. On the hidden role of chance in business and in life* (Moscow: Mann, Ivanov and Ferber) p 320
- [12] Vilchek V 1993 *Farewell to Marx: Algorithms of history* (Moscow: Progress culture)
- [13] Ivanova S, Kvitka S, Andrienko M, Dolgiy O and Dolgiy A 2020 Information management to reduce the risks of agribusiness in organic farming. *E3S Web of Conferences* **208** 03020
- [14] Ivanova S 2020 Information crisis: essence and potential. *Communication and communication technologies*, 20 42-48
- [15] Miethlich B, Kvitka S, Ermakova M, Bozhko L, Dvoryankin O, Shemshurina S and Kalyakina I 2020 Correlation of Educational Level, Labor Potential and Digital Economy Development in Slovakian, Ukrainian and Russian Experience. *TEM Journal* **9(4)** 1597-1605
- [16] Ivanova S, Gainutdinova L, Kvitka S, Shvydenko M and Kulishova O 2021 Models of management of the territorial community nature resources' rational use *E3S Web of Conferences* **255** 01025
- [17] Arsawan IWE, Duginets G, Kalinin O and Korostova I 2021 The impact of green innovation on environmental performance of SMEs in an emerging economy. *E3S Web Conf.* **255** 01012
- [18] Mikhno I, Korenyuk P, Smutchak Z and Bozhanova V 2021 Modeling corporate games to increase the ecological value of entrepreneurship and innovative business. *E3S Web Conf.* **255** 01027
- [19] Kvitka S, Borodin Ye, Yemelyanov V, Ivashova L and Bocharov O 2020. The foresight of national economy's digital development. *Revista inclusiones* **7 (SI)**