

To Save The Climate, Humanity Must Change Its Attitude to Water and Rivers

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Introduction

The leaders of many countries are blocking roads, bringing in thousands of bags of sand and clay, raising banks, embanking houses, pumping water out of basements, and evacuating residents. Flood protection is planned and implemented in advance. Huge amounts of money are spent on this every year. Maybe all these actions are aimed at the planned reduction of the planet's population? There is no visible action, no real assessment and no movement towards flood prevention.

In the summer, all the water goes away and there is not enough for drinking and irrigation. To prevent this from happening, high dams are created to flood vast areas. All dams require repairs, maintenance, and reconstruction. But many countries stubbornly continue to build new reservoirs. The construction of dams above river banks is a crime against humanity and nature. Each such structure is a potential disaster.

Considering and analyzing the causes of floods, one can notice that among them the most important, or rather the most important and only true reason, is almost invisible - changes in river bottoms.

Increased volumes of spring waters and heavy rains do not fit into river beds. Why don't they fit? Because the depth of rivers decreases continuously, daily and every minute along their entire length. Added to the natural sources of bottom sediments from eroded shores is contamination from coastal populations - industrial waste, feces, garbage, soil and building materials washed away by floods and periodic rains.

Over millions of years, bottom sediments - minerals washed away from the shores, gradually and regularly, lying on the bottom, dissolve over time and are consumed by plants, animals, and bacteria. Unknown to nature, the layer of human waste reduces these contacts and reduces the volumes of

historically needed solutions. And they are needed for biotas of land, lakes, seas and oceans, and for humans too. Melt mountain water has no salts.

Nature did not foresee the appearance of waste of such volumes and qualities at the bottom of the river, and the water does not have time to purify itself. The bottom gradually rises - the water overflows its banks.

Floods are basically the same natural phenomenon. However, civilization has brought some changes to these phenomena. Man has increased the rate at which river bottoms rise. He started dumping his waste into rivers. The river flows through many cities, settlements, and countries. Each settlement can install a dam, straighten the meanders, concrete and raise the banks, withdraw any volumes of water, dump and drain garbage, waste, and feces. And what is going on between the settlements is, to say the least, uninteresting to humanity. But this is the main reason for floods. The increased rate of river bottom rise leads to periodic floods. There must be stabilization of river bottoms in constant readiness to pass increased volumes of water.

The artificial rise of river bottoms also requires artificial cleaning of the river bottoms. This is the only way to prevent floods. There is one possibility - to periodically prepare river beds for increased volumes of water release - to prevent shallowing of the bottom. Along the entire length of the river. Maintain river beds in the same condition as they were before the advent of civilization. Man has accelerated the rise of river bottoms - and man must prevent floods. To do this, maintain the stability of the river profile. Or take care of preserving what was before his carelessness towards the rivers. To avoid overflow and flooding, it is necessary to maintain rivers in normal condition.

Modern dredging technologies have grown into a powerful industry producing an arsenal of floating monsters from hundreds of tons of metals, plastic and

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many other materials, devouring their rivers of fuel and using labor resources.

Each city or any other settlement on the banks of the river is a subject, and the river is an object that at a given place depends on the coastal settlement. The raised bottom does not allow the passage of periodically increased volumes of water. The river must be deepened along its entire length as it silts up.

Not every coastal farm can buy or rent a serial dredger for deepening the river bottom. Modern technologies for deepening river bottoms can locally increase the depth of the bottom by several meters in a small area, but do not solve the problems of cleaning the bottom along the entire length.

Each river along its length alternates between banks that go close to the surface of the earth and canyons and water valleys, floodplains with high banks, along the bottom of which river beds run, occupying small parts of the floodplain profile. Filling part of such floodplains by half can become an accumulation of water for consumption by the population. Here it is possible to wash and lay dams from raised silt up to the bank of the floodplain, which is filled to half the entire depth. When precipitation increases, the floodplains fill completely. And culverts for ships and fish control the level, releasing the necessary part of the water, preventing overflows.

This suggests the creation of a new principle for cleaning river bottoms. Only the availability of inexpensive technology for deepening the bottom of rivers can lead to the return of natural regimes of water movement in their channels. What is needed is a brush type device that can remove sediment throughout the entire river at minimal cost.

Devices based on the use of the forces of water movement itself have been proposed. The design of the devices is hundreds, thousands of times smaller in volume and metal consumption than serial dredgers, and does not consume external energy. The device moves slowly along the river bottom, stirs up bottom sediments, washes them away and carries them with the current solely by the force of the current, without human intervention. The concentration and direction of movement of water flows is ensured by special dampers. The device constructively uses the flow of the river, and does not require energy to move silt and its own movement. Low productivity with a continuous round-the-clock cycle will be able to cover the entire river in spring, summer and autumn before it flows into a lake or sea.

The technological process is carried out by directing the agitated flow along a given trajectory. Zones of

deep erosion are created, moving after the raised suspensions; depending on their composition, dispersion, properties, they can be brought to the shores, closer to the shores, or placed in dams and rifts in specified areas of floodplains or canyons.

The proposed device is held by the bottom, but not permanently, but with the ability to move, through the interaction of the current with special anchor devices and shields that form buoyancy, windage, braking and control of the trajectories of raised bottom sediments.

The manufacture and operation of devices that use the forces of movement of river waters to form a channel within specified limits, with specified depths to restore navigation, are available to small coastal farms that suffer from floods, bank collapse, and shallowing of fairways. The cost of materials and manufacturing is many times lower than the production of known devices,

Organizationally, it is possible to divide the entire river behind each coastal settlement along the length to the next settlement downstream.

Individual elements of micromodels of the device have been tested on small rivers, but this is not enough for full-scale research and the creation of new technology. To test and demonstrate the effectiveness of the new method under natural conditions, full-scale development tests and studies of the proposed device on various rivers are necessary.

Experience at a natural site will show the effectiveness and possibility of creating and developing a line of products in a variety of standard sizes. Simplicity and low cost will allow the production of many dredgers that can go along the entire length of the river and remove bottom sediments layer by layer to any distance, almost without human intervention.

Widespread and simultaneous dredging of the bottom of all rivers where floods occur can eliminate them in the near future. The designs of such devices are developed for each type of water body. From small rivers to great rivers such as the Irtysh, Ural, Mississippi, Nile.

Two, 10 or 100 such devices distributed along the entire length will be able to remove a soft layer of sediment from any river up to one or more meters deep along the entire length with round-the-clock movement. They can work continuously and in 3-9 months they can travel the entire length of the river. Without fuel consumption and with minimal labor resources.

The newest device is made from structures that have served their time in their field - materials at a negative cost - from a complex of decommissioned mechanisms from scrap metal.

This technology with the new proposed devices will allow saving water from evaporation and branches into new delta channels if the sandbanks in the main, historical channel are removed. It will be possible to narrow the delta to at least a single channel and restore navigation in abandoned areas. For example, it is relevant for the deltas of Lake Balkhash and the Kapchagai reservoir, which continue to increase.

The use of the original braking and movement mechanism, in addition to the work shown with soft bottom sediments, allows you to perform any other underwater work that is performed by existing dredgers and dredges using known serial types of existing equipment. Of course, here you will have to use external energy. These are dredgers, mowers and rippers, grabs, and other mechanisms for cutting plants, lifting sunken objects and tree trunks, and transporting bottom sediments to the shore. The possibilities of creating new technologies for washing and sorting bottom sediments, for example, for extracting gold without lifting waste rock to the surface, are attractive.

The most effective way is to use the device exclusively to deepen the river along its entire length. It is possible to supply it with a lead screw, a power unit and a software control device. Then the device becomes a drone, independently removing the bottom layer and returning to its original state to repeat the process

It is offered to an enterprise that can test and become the owner of a new, unprecedented licensed technology.