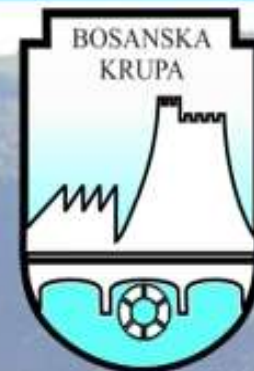




Municipality of Bosanska Krupa

Agenda 21

PROGRAMME FOR SUSTAINABLE FUTURE OF THE MUNICIPALITY
OF BOSANSKA KRUPA



BOSANSKA

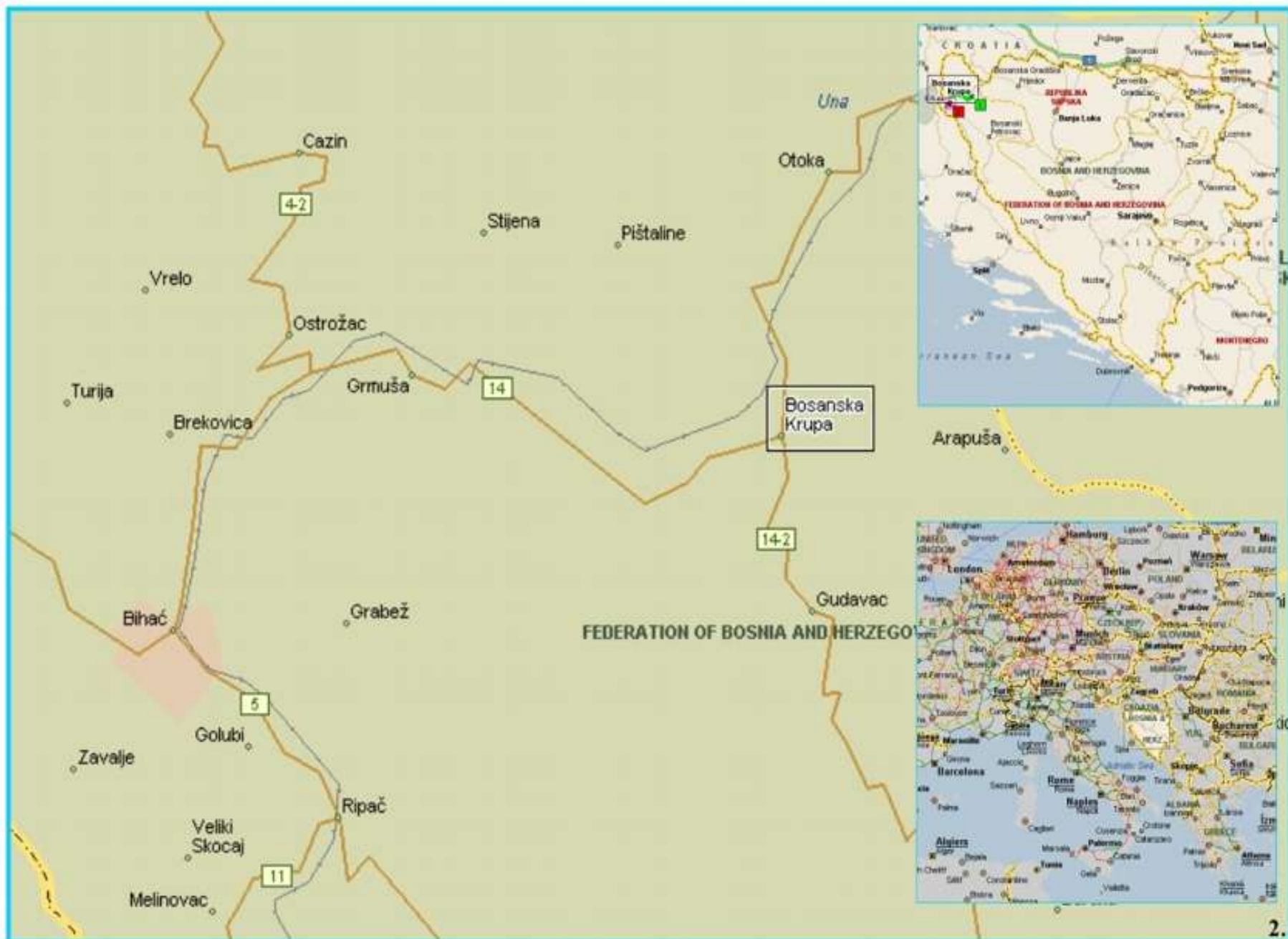
Prof. Dr. Timi Ećimović

KRUPA

Agenda 21

**For sustainable future of the area of
Bosanska Krupa Municipality, Bosnia and Herzegovina**

Bosanska Krupa May 2005





Acknowledgement



Accompanied with assistants we thank to all those who gave a hand for making of this Agenda 21 for sustainable future of the area of Bosanska Krupa Municipality.

Particularly we appreciate work on Agenda 21, as it is first step towards sustainable future of citizens/inhabitants in the area of Bosanska Krupa Municipality. It was probably one of most damaged regions during last war, and amongst those in Bosnia and Herzegovina affected and suffered the most during the last meaningless war. We believe they deserve all attention of internal - Municipality, Una-Sana Canton and government of Federation as well as external, European Union and some of their constituent countries, all other of European countries, United Nations and all other countries of the world cooperating for humanitarian assistance.

We are thankful for cooperation to all those cooperating on establishment of this Agenda 21 till present, and we hope for co-operation with all those, that will do the same in the future in view of launching of Agenda 21 for sustainable future of the area of Bosanska Krupa Municipality.



Prof. Dr. Timi Ecimovic



Foreword

Agenda 21 for sustainable future in the area of Bosanska Krupa municipality is program created with cooperation of dr. Timi Ecimovic, Mayor of Bosanska Krupa Municipality, Mr. Hamdija Grosic, former Mayor of Municipality, Mr. Dzermaludin Causevic, members of Municipal Council, schools, NGO-s, experts and citizens of Bosanska Krupa as well as team of volunteers who share the same wish to have better future for Bosanska Krupa. Simultaneously with Agenda 21 we must appreciate already existing projects, which are as follows: Strategic Development of Bosanska Krupa Municipality, Project of Development of Tourism and Recreation, and others.

The author of agenda 21 for the area of Bosanska Krupa municipality is Prof. Dr. Timi Ecimovic in assistance of following generous volunteers:

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THE PRINCIPLE OF AGENDA 21 FOR SUSTAINABLE FUTURE OF THE AREA OF BOSANSKA KRUPA IS IN DEMOCRATIC APPROACH AND ATTENDANCE OF THE LARGEST POSSIBLE NUMBER OF CITIZENS. ANYONE THAT HAS TO ADD SOMETHING, CHANGE OR SUGGEST CONSIDERING THIS AGENDA 21 FOR SUSTAINABLE FUTURE OF THE AREA OF BOSANSKA KRUPA MUNICIPALITY IS WELCOME TO DO IT. THE COORDINATOR OF AGENDA 21 IS THE MAYOR OF BOSANSKA KRUPA MUNICIPALITY, MR. HAMDIIJA GROSIC, AND WE WOULD APPRECIATE IF YOU PRESENT TO HIM YOUR WRITTEN NOTES.

Introduction

Agenda 21 is program of activity of citizens within certain area, who wish to live tomorrow in accordance with realistic potentials of nature, space and environment as well as political, economical and social reality. As such, Agenda 21 for the area of Bosanska Krupa is rising on ruins of 10 years after the war was finished, with the purpose to make achievable sustainable future in the third millennium of our epoch.

On the Earth Summit conference in Rio de Janeiro, June 1992 were established foundations for sustainable (development) future accepting "Agenda for Change", which is setting path/program for the Earth, or some of its areas (continents, states, provinces, municipalities, economical subjects etc) related to undertake evolvement needed for achievement of sustainable future. Ten years later in Johannesburg in South African Republic, Aug/Sept Agenda 21 was confirmed again, and other contents necessary for managing of life at present time of big changes within the Earth: System of Climate Changes, and political-economical-social system of our civilization (globalization, internalization, free trade, transport, energy etc.). The United Nations have set the platform available to peoples of the Earth, with purpose to have harmony with nature, space and environment, and political/economical/social reality of life conditions.



Municipality of Bosanska Krupa experienced the cataclysm of destruction during last war. All of contents of life were destroyed. After the end of the war people have found themselves establishing roofing clothing food and water electricity etc... Later on, the primary reconstruction made possible life, but only on basic level. Today, so many years since war was over, citizens of Bosanska Krupa Municipality are looking for needed contents of life/standard, but unfortunately with low possibilities for success. Contents of life are far behind their financial abilities, and in order to have better future it is indispensable to upgrade standards. It is a challenge for Bosanska Krupa inhabitants to achieve better living conditions, as pre-requisition for raising families.

With compilation of Agenda 21 for Bosanska Krupa Municipality, our intention was to illuminate problems of present and future, to define basics of the life tomorrow, to establish contents of necessary projects in present times of big changes on the Earth.

The system of climate change and protection of nature, space and environment are subjects requiring new multidisciplinary solutions. Better life conditions of citizens would be considered as a base, and will present difference comparing to other areas within country.

Particular part of Agenda 21 is concerning nature of Bosanska Krupa area, Una as main subject according to words of Dr. Nijaz Abadzic, Una is one, the only one, and unique, which makes us for ever particularly obliged concerning that matter. It is possible to explain shortly as it is reciprocal dependence of living conditions and quality of nature. We could expect better tomorrow if that balance between life and nature remains, so to make life feasible. That condition demands great effort for the planning phase, but for implementation a large financial means.

Financing is certainly too large for capabilities of Bosanska Krupa as well as canton and even Federation. We think Agenda 21 implementation is possible with assistance of international community, European Union, United Nations and others. For that purpose we think we have contents in accordance to requirements and possibilities.

In a kind of rational approach, we think to present actions/projects needed to insure the life of people in Bosanska Krupa tomorrow and time afterwards. Based on the contents planning has to follow and to include needed agenda.

Elementary idea is in putting people as main value. That part of the value within Bosanska Krupa Municipality has suffered most during the war, and that is why Agenda 21 would be concentrating on return and increase of population.

The goal of Agenda 21 is to restore and improve basis of living and protection of nature, as mode for stopping migration of population. Or by other expression to do planning of increase of population on the basis of good living conditions.

Setting basic values favouring population and quality of their life conditions within Bosanska Krupa Municipality is a new approach for reconstruction. In present, unacceptable conditions - low standards of apartments and houses, roads, sewerage system, communications, schools, energy consuming and consequences of the war could be replaced with some positive changes of contents. It requires identifying of projects and their influence concentrating on main goal and by that helping improving living conditions. Such approach would result to have better living conditions, than have other areas in Bosnia and Herzegovina.

Present problem of decreased population and migration of population to areas with better living conditions would be held up, and could result with positive trends.

Although with positive action on reconstruction and assistance of citizens in preparation and implementation of work would raise up understanding of population and better working accomplishments.

Today and in the future the biggest problem of the Earth and as well the area of Bosanska Krupa, will be the impact of the climate change system. Accomplishing of Agenda 21 for sustainable future in the area of Bosanska Krupa we wish to create and set the possibilities and ways of mitigation of impacts of climate change system on nature, space and environment. Also it is important to prepare contents which the climate change system would affected the most, and are as follows: level of running and other waters, changes in flora and fauna, more frequent floods and longer droughts, short but more severe winds, local climate changes with temperatures raising up, with precipitations of big quantity of water within shorter time, increasing and decreasing of fertility of the agricultural soil, changes in forests, erosion of the land, etc. Agenda 21 for sustainable future of the area of Bosanska Krupa is a document not characterized with perfection, but an open document complementing itself and adapting to new conditions.

Approving of Agenda 21 for the area of Bosanska Krupa, the municipality would get new quality of work. Solving problems of low standards of living conditions is basic interest of every local community, but for several reasons and in many of communities all around the world less and less are solved such problems.

So, by implementation of Agenda 21 the living standard will increase living opportunities/conditions of Bosanska Krupa population for better future sustainable future.

We believe that it is of most importance that this Agenda 21 becomes part of living and the motive to each citizens and family of our community. We think that every inhabitant of Bosanska Krupa would be recipient of one copy of the Agenda 21, and contributing/cooperating with implementation of it.



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- 2.3. Waste materials
- 2.4. Roads
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- 2.6. Town transport
- 2.7. Heating
- 2.8. City sanitation department, arranging of green areas
- 2.9. Fire department

3. Villages and settlements

4. Rivers Una and Krusnica

5. Forests

6. Energy

7. Agriculture

8. Education

9. Culture

10. Health care

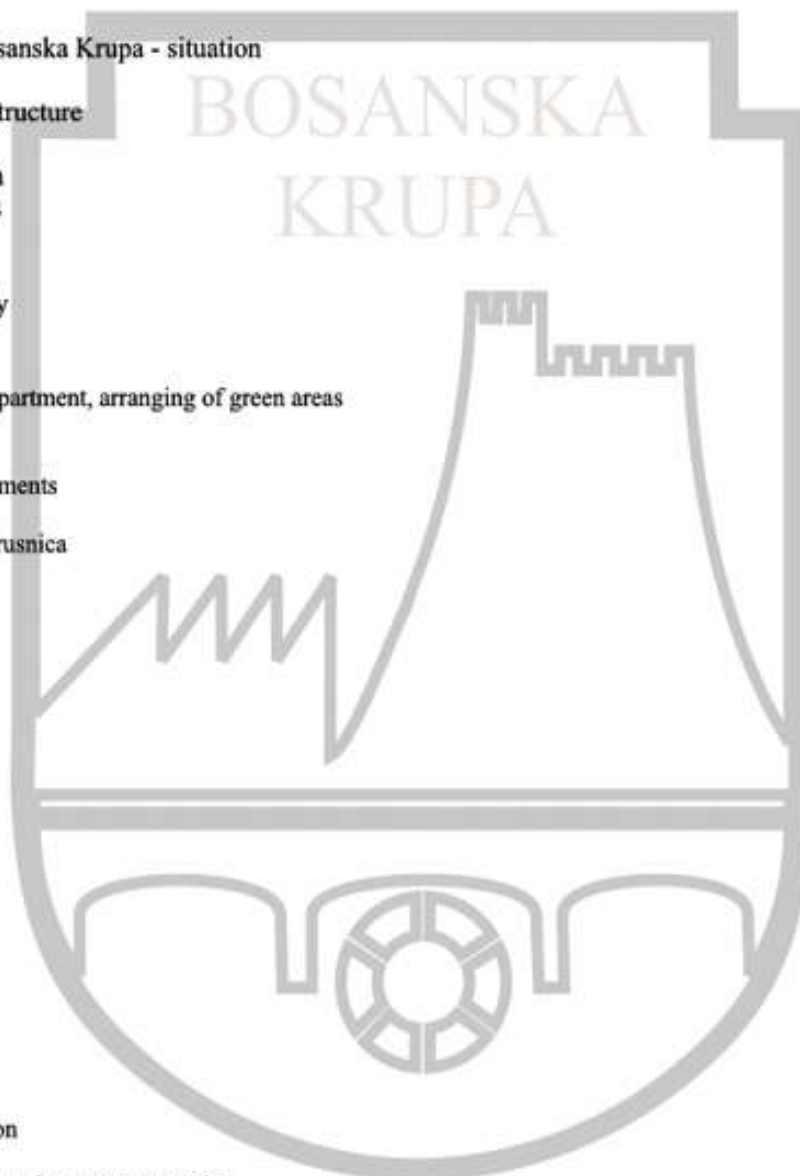
11. Transport

12. Economy

13. Tourism

14. Sport and recreation

15. Nature, space and environment protection



1. Bosanska Krupa Municipality present situation

Bosanska Krupa area is situated within rivers Una and Krusnica. The largest part of town was settled in lowest part between Hum hill and Stari Grad castle on height of 156 meters of enlarged part of Una River Valley. Otoka, second center inside the municipality area has been established little bit on north downstream the River Una.

Bosanska Krupa Municipality before the war was occupying 778 square kilometres, but during the war, after secession of Buzim local community and Krupa on Una (Serbs new municipality), present Bosanska Krupa Municipality has 556 square kilometres.

Bosanska Krupa Municipality is placed on North West of Bosnia and Herzegovina, bordering with communities of: Bihac, Cazin, Buzim, Bosanski Petrovac, Sanski Most, Bosanski Novi, Krupa on Una, and Dvor in Republic of Croatia. International River Una, with her spring in Croatia, shortly after her spring is running trough Bosnia and Herzegovina's north-west part, actually is making main characteristic of Una-Sana Canton. Bosanska Krupa township is connected inside canton trough roads on south with Bihac and further to Republic of Croatia and with other important communications in Balkan, South Europe, and other parts of Europe.

PEDALOGICAL CHARACTERISTIC OF SOIL

Foundation of Una valley and Bosanska Krupa widening are composed of triar dolomites and limestone with ingredient of clay, so Bosanska Krupa widening is framed limestone amphitheatre of Jurassic age.

In continental scope of Bosanska Krupa is formed hilly ground such as:

- * Brown deep ground and hollows on hard limestone's and dolomites
- * Brown deep ground on limestone's and dolomites
- * Brown shallow grounds with crimson soil on firm limestone's and dolomites
- * Brownish shallow crimson soil on hard limestone's and dolomites

In central part of Bosanska Krupa widening on very tick pleistonic and alluvial stratus were formed valley grounds such as:

- * Alluvial-carbonate ground on sands and clay (forming soil in the center of wide area of valley along River Una, mostly ploughed fields),
- * Alluvial-diluvia-bicarbonate ground (source substratum of this soil is alluvium sand-clay sediment, ploughed fields and meadows).

CLIMAT CHARACTERISTICS

In Bosanska Krupa region is prevailing continental climate with high temperatures during summer months and average year temperature is 10.8 °C. There is very rapid transition of temperatures between winter and spring (month March 5.6 °C, month April 11.1 °C) The autumn is a season with large quantity of rainfall, and spring season as well, so that represent humid parts of year and together have average quantity of 723 mm per square metre of rainfalls. Rains falling during spring and autumn season are long lasting, slow, abundant causing floods usually.

Snow period is lasting as in an average 127 days per year. Bosanska Krupa is the area with high percentage of relative and absolute air humidity.

River Una valley is making directions of local and regional winds and approximate index shows winds coming from:

South-West quadrant	13.8%
North-West quadrant	22.90%

Storm winds have never been experienced, and the strongest winds are occurring during February.



DEMOGRAPHIC DATA

Population in local communities (MZ) in 2004:

Nb.	Local Community	Number of inhabitants
1	Mahmic selo	2067
2	Jezerški	3505
3	Pistaline	1523
4	Otoka-centar	3080
5	Otoka II	2552
6	Hodzinac	830
7	Krupa II	4320
8	Krupa-centar	4961
9	Zalug	1521
10	Halkici	587
11	Stari grad	1740
12	Zalin	178
13	Arapusa	197
14	Veliki Dubovik	102
15	Jasenica	201
16	Veliki Badić	1691
17	Ostruznica	1203
18	Ljusina	997
19	Ivanjska	454
20	Radić	395
21	Suvaja	251
22	Gornji Petrovici	198
23	Vranjska	222

TOTAL

32753

Population by age in year 2004 was:

Age Structure	-18 years		18-35		35-65		Over 65	
		%		%		%		%
	12281	38	8188	25	9015	27	3310	10

Analysing present situation we got some figures of population density of 58 inhabitants for square kilometre. The municipality have been characteristic migrations of population on daily and weekly bases as well as population involved in temporary employment working abroad. According to year 1981 data from the area were 2.993 or 5.4% of total population, where temporary employed abroad. We estimate present situation different with larger percentage in exile (exact number is not known).

Population of Bosanska Krupa Municipality is as follows:

	1990	1995	1996	1997	1998	1999
Born	1035	15	250	358	297	92
Deceased	406	95	90	100	100	15
Growth increase	629	-80	160	258	197	77
Deceased babies	17	-	-	1	1	-

Negative growth occurred in 1995 because many of children were born at Bihac canton hospital. Because it was the year of population return to Bosanska Krupa, Healty Centre (Dom Zdravlja) was without conditions for Bosanska Krupa for Baby delivery Also to mention that at present majority of births are happening at Bihac Cantonal hospital.

In the area of Bosanska Krupa were registered 268 war invalids with over 50 % of disability.

According to records of Sehida organization total number of self-supporting mothers is 267.



WATER RESOURCES

Besides rivers Una and Krusnica of importance to Bosanska Krupa are characteristic levelled springs on the contact with limestone frames which makes different intensity of water wells. River Una flow is very jagged in Bosanska Krupa widening causing very intense lateral erosion and forming of stratum deposits.

In the area of Bosanska Krupa in River Una are tributaries few streams and on her right side River Krusnica.

Peak water level is with intensity of 5 meter of relative elevation which causes floods with longer or shorter intervals.

Average monthly water level on Una is 1.84 m, medium annual cca 1.15.

In Bosanska Krupa area, or its close surrounding appearing characteristic springs in two levels. Important springs for this Bosanska Krupa are in Valley of Krusnica River. Partially are springs connected to gravitational water as underground water circulates trough limestone of in the surrounding area. On distance of 5 km from the town is emerging river Krusnica spring, one of the strongest in Europe. On its spring is located hydroelectric power station in function and as property of National Power Company (Elektrodistribucija) Bihac.

General characteristic for mentioned resources are low utility and extensive use for development. This potential are utilized insufficiently (especially waters) extensive (land), only sporadic (natural values).

OTHER NATURAL RESOURCES

Land as natural and conditional resource for agricultural production deserves great attention in all strategic plans, projects and analysis of situation.

For that reason we are presenting data about terrain in Bosanska Krupa area.

CATEGORY	HA		
Total area	55715		
Cultivable land	Private	Governmental	
	Total		
Land under cultivation	13269,68	3615,31	16885
Orchard	373,37	100,63	474
Meadows	2765,67	1459,33	4255
CULTIVABLE TOTAL	16408,72	5175,28	21584
Meadows	1933,00	4277,04	6210
TOTAL AGRICULTURAL	18341,72		9542,31
	27794		



Total agricultural area is 27794 ha or 49,88% of total land in Bosanska Krupa municipality area.

Area of Bosanska Krupa makes 1,02% of total BiH.

AGRICULTURE

Minimum area of cultivable land per inhabitant is 0.17 ha in B&H or close to this limit and in Bosanska Krupa area is 0.52 ha per inhabitant.

Continuously are present different examples of permanent or temporary kinds of utilizing of agricultural land, which presents big losses in agricultural production.

The main problem of agricultural sector is untitled land in Bosanska Krupa area as well as in whole of BiH. As governmental property are 3615 ha of land under cultivation necessary for that quality land to be granted to interested in ecologic/organic modern and profitable agricultural production.

We estimate that in municipality are around 5000 rural/agricultural households, 50 % of them live solely from farming without any other incomes. Our agricultural producers are characterized as small, scattered on 5-6 parcels of land, which hinders organizing of production and decreasing its profitable use.

Review of number of producers according to size:

0-1 ha	1-2	2-3	3-5	5-10	10 and more	total
8869	2068	1281	1593	1600	588	1599

Cultivated land in the area of municipality are increasing year after year, during spring and autumn of 2004 cultivation, and according to appraisal utilized lands were up to rise to 7145 ha. Largest areas are under clover and grass and for grains, leading one is corn.

In the area of Bosanska Krupa because of heritage and tradition, dominating activity is farming and cattle breeding. Cattle stock was damaged during the war, and is slowly recovering by imports and results of cattle breeders work on reproduction. According to data of before war time, present number of livestock is at 50% of pre-war number and are as follows:

Present state in numbers:

CATEGORY	
Cows/heifers	5000
Sheep	6000
Horses	150
Goats	300
Pigs	750
Poultry	30000
Beehives	2000

Milk collection/purchase are organized and are covering all areas where conditions of roads allow Organization, are acceptable with enough quantity of milk and with infrastructure. Buyers are Megle-Bihac and Milex-Jezerski.

Results areas follow:

Dairy purchased	No. of purchase location	No. of subcontract.	Litres of milk
Megle	32	1063	3 334 984
Milex		240	715 016

Data includes municipality area for period from 01/01/2004 to 30/11/2004, during the same period of previous year quantity of purchased milk from dairies was around 2 500 000 of litres, which show progress of production in this area.

By research, during year 2003, import of milk and milk products in BiH was 30 times larger than Export, and that BiH imported more than 50% of needed milk and milk products. Solving of this situation is increasing of livestock, change of breed structure, increasing of productivity of milk per cattle and increase of quantity of collected milk.



Production of milk in BiH is modus of development of total agriculture, condition for working engagement of population and use of agricultural resources.

This production we must treat as strategic determination.

Second important is farming and vegetables production, which is at present on very low level, and mostly is based on production for personal needs of households. This production for the market will start after reopening of manufacturing capacities of Agrokomerc from Velika Kladusa. Results after efforts to restart production did not fulfil expectations of producers. Reasons for it were low purchase prices, expensive modern Production technology (system of production under foil, system of irrigation etc), and more frequent appearance of elementary weather changes (drought, flood, hail, frost) under impact of the climate change system.

In the area of municipality is starting indoors vegetables production - greenhouse: During last two years with assistance of Lutherans association, 22 of greenhouses were constructed by producers.

We noticed that farmers are expanding this production, getting new greenhouses, so this kind of production could develop and become income for several families and we will do our best to help it.

Fruit growing is a kind of production that should be developed in our area, with adapting choice and sorts/brands and kinds of technology, according to condition of production area and requirements of the market.

Even on the register of our municipality 474 ha are registered as orchards, we can state that our existing orchards are old and in very bad conditions, diseased and heterogeneous in brand, and including very low yield.

Structure of planting and production technology should be adapted urgently to conditions of organic/ecological production for fruit growing proved as very lucrative kind of agricultural production in BiH especially concerning irrigation conditions.

Fruit growing could be organized in small properties with self employment and ensuring of significant profit for unit. Therefore some funds from Federation and USK should be allocated from their budget in order to help to development.

Most frequent fruits in the area are plums and apples with very good yields ever year.

Beekeeping is a branch of agriculture, which in our area is gathering around 80 producers with 2000 of beehives. These producers are gathered in association of beekeepers called Lipa-Bosanska Krupa

Interesting is the fact we got after our examination of agriculture situation in BiH after war showed us that beekeeping was the only branch with higher level of production comparing with pre-war one.

In the area of municipality we have total of 5 Associations of farmers, first established was Association of beekeepers in 1999, another two associations were established as initiative of organization of donators restricting their donation and technical assistance by agreement to form such Association. That is how farmers organized associations of »Agro-Una« in Pistaline and »Povratnik« in Veliki Badic. Both organizations are under supervision of Cantonal association of farmers (KUP), which gave them machinery to use on the principia of common utilization.



Associations «Jezerski» in Jezerski and «Aktiv zena Otoka» in Otoka Bosa
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Rate of employment in municipality
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WATER SUPPLY

Town water supplying system is conducted by Javno Komunalno Preduzece (Public Utility Company) JKP »10 July« and they supply with water over 4100 of households. Total quantity of water this company is delivering from wells is 102 l/s. This quantity is an average annually. During the whole year our system is working permanently so we do not have reduction or stoppages. System is separated in seven zones. There is a tendency to have water pumping station Ade as main one for Bosanska Krupa Municipality.

QUALITY OF WATER

The control of samples of raw water quality, as samples of water from the system taken during 2002 had shown not any major pollution nor on raw sample neither on disinfected one except zones III, VI and VII supplied from spring Zidina. This water well is contaminated and analyses showed high concentration of ammonia. For that reason these days are about to be finished activities on connecting of water supplying systems of Bosanska Krupa and Bosanska Otoka, so in future to have water of good quality there.

Physics and chemical analyses of row water on other water wells have not shown any aggravations, except in some cases where occurred bacteria of fresh faeces origin which points to ruined plumbing. Company is doing regular analyses on 16 locations placed in all zones and taking raw samples of water from 3 springs, except spring Zidina already contaminated and no need for taking another sample. Even after weather changes wells did not change quality. For last 5 years in hygienic epidemiological service of Dom Zdravlja (hospital) Bosanska Krupa never recorded and infection caused by bad water quality.

DISTRIBUTIVE SYSTEM

Distributive water system of Bosanska Krupa as very long (app. 71 km of main line) and pipeline are made from different materials (coasted iron, asbestos, cement, PVC, PE, steel, coated with zinc steel). The oldest part of system is in zone I, in the center of town with big losses occurring because of having two water systems, old one and new one, which was constructed by donation of EU. Both systems are in function, because old system holds all users. In whole system is practically same pressure (PN 7), except in higher positions where is still system of pumping stations with different pressure. There are still some town zones not included in water system and require building of new pumping station. In zone I is one and in zone II are two stations. Length of town water system is 91.2 kilometres.

SEWERAGE SYSTEM

Problem of sewerage we can consider as one of biggest problems in our municipality area and we may call it as critical. In Bosanska Krupa after the war big part of sewerage system was left blocked and Communal company did not have appropriate machinery for cleaning of sewerage system. For Bosanska Otoka we can confirm not existence of sewerage system suitable for town settlement. For the fact that many sewerage lines were of very bad quality with possibility of faeces leaking, we are anticipating danger of underground water reserves contamination. Another thing is not having any filters for purifying of dump waters but direct draining into natural recipient.

Almost all surface waters collected from public areas are connected to town faeces collectors, what makes this as mixed system of draining of dump waters. The biggest lack of existing system is that during winter season all abrasion materials are collected in street drains and sewerage. Considering all this we consider necessity of reconstruction and adaptation of present system to planned one from before the war. Both Bosanska Krupa and Otoka should be connected with one sewerage system. Also it would be necessary to construct sewerage systems at villages and rural areas to protect local water springs and population protection from epidemic.



WASTE MATERIALS

At present waste materials are collected and transported to Krivodol landfill 12 kilometres far from Bosanska Krupa. Landfill site is occupying app. 1.8 ha with capacity of 165 000 m³. It's been in use since 2000 as common dumping site for Cazin, Buzim and Bosanska Krupa communities. It is only landfill for households and institutions and has not been planned for treatment of dangerous waste (medical, radio active, chemical, etc). Up to 50% of landfill is filled and will be in use till the end of year 2006.

Bosanska Krupa Communal service is planning before the end of current year to have modern system of collecting and separating of wastes and with that to make conditions for reprocessing of plastic, paper and metal.

MAIN DANGER FOR POPULATION IS COMING FROM THE IMPACT OF CLIMATE CHANGE SYSTEM, WHICH WE SHALL EXPERIENCE MORE AND MORE IN OUR LIVES. MORE ABOUT IT PLEASE FIND AT THE CLIMATE CHANGE SYSTEM, BUT HERE IS IMPORTANT TO MENTION FOLLOWING ISSUES, WHICH HAVE BEEN CONSIDERED IMPORTANT FOR POPULATION AND ITS PROTECTION FROM THE CLIMATE CHANGE SYSTEM.

JUST IMAGINE WHAT MAY DO SOME STRONG WIND COMING WITH SPEED OF 200 KM PER HOUR, AND WHAT COULD HAPPEN IN BOSANSKA KRUPA OR OTOKA? THAT IS A REASON FOR FOLLOWING CONTENTS AS HAVE BEEN SUGGESTED.

2. Communal infrastructure of Bosanska Krupa Municipality

Contents need to be arranged:

2.1. SEWERAGE SYSTEM

Sewerage system would be necessary to have purpose of transporting of treated water and atmospheric waters ONLY. Present system of sewerage with certain changes would be changed in technical kinete/trench or system for transporting/supplying/moving of grey water (all waters that include atmospheric water and primary treated water), separately drinking water distribution, for supplying with hot water for systems for remote heating, electric power, communication lines (telephone, cable TV and others). Technical kinete as integral part of the town is permanent solution and it is necessary to plan capacities with care.

System of treatment of polluted waters commence with education of population, to accept using water in a way not using without limitations (habits during usage - classical habit is to let water running in toilets - EVEN NOT NECESSARY). Second important fact is that all liquids used in household and other users of sewerage system (cosmetics, paints and protection liquids, industrial polluters, pesticides, medicines and synthetic chemicals), are drained trough sink. In that way, dump waters are polluted with even dangerous liquids complicating primary treatment. Third important fact is that because of impact of climate change system, quantity of drinking water will not increase but decrease. Good leader would in that situation organize rational use of available water - from supplying to usage, treatment and using of grey water (all water after primary treatment), to draining of water in natural recipient (Una/Krusnica).

After draining of polluted water from households and other users it is treated in closest system of constructed wetlands. Firm part is settling in settlers and liquid part is treated in constructed wetlands system. On a such way we are getting primary treated grey water that could be treated again trough system of secondary treatment in constructed wetlands or settling sanitary ponds. There is possibility of combining of systems from constructed wetlands to sanitary ponds/lakes. Next stage is drainage of grey water to users or draining to natural recipient. Primary principle is to have polluted waters treated nearest to place of pollution.



With such system of polluted water treatment we are getting quite a big quantity of firm part of liquid polluted waters, which could be composted and used as fertilizer for maintaining quality of agricultural, communal and recreation areas. With composting we are solving a problem of content of sewerage sediments. Grey water together with atmospheric waters is used in several ways, from fire prevention of forest areas (artificial lakes to be used in case of forest fires), irrigation of lands under cultivation, public and recreational areas maintenance, using it for cleaning town areas-roads, watering gardens and recreational areas etc.

Technical kinete and systems brought with it have very big importance for improving of living conditions and protection of population.

PROPOSAL OF PROJECTS

1. Technical kinete - system for town area of Bosanska Krupa and Otoka Bosanska with subsystems for:

- * Drinking water transport,
- * Grey water transport,
- * Connecting of system for supplying with electricity,
- * Connecting of system for supplying with wire telephony and communication systems,
- * Connecting sanitary systems of primary and secondary treatment of polluted waters and system for using of grey waters,
- * Transport of thermal energy from remote heating.

2. Forest, village, suburban and urban ponds of grey water after treatment and atmospheric waters, which have been prepared for use for different purposes.

3. Protection of nature, space and environment from polluting from polluted waters - making of constructed wetlands before draining any waters from human ecological systems in natural recipients (discharge waters from landfills, water from the roads and larger areas-squares, airports etc., bridges, highways etc, industry, agriculture, tourism, catering, food industry etc.)

4. Protection of forests, villages, suburban and urban areas from fires

5. Recycling of materials from firm part of polluted waters with composting and reuse for good purposes. This subproject is connected with biological waste from system of communal recycling and biological waste from integrated forest and parks management.



United Nations in effort of promotion living conditions on Earth brought us 8 millennium goals, which should be attained till 2015. Goals are following:

BY YEAR 2015 THE NUMBER OF ENDANGERED POPULATION TO BE HALVED IN REGARD OF:

- 1. POVERTY AND SHORTAGE OF FOOD**
- 2. ILLITERACY**
- 3. UNEQUALITY OF GENDER (MALE AND FEMALE)**
- 4. INFANT MORTALITY**
- 5. DISEASES AND DEATHS OF PREGNANT WOMEN AND WOMEN IN CHILD BED**
- 6. SPREADING OF AIDS, MALARIA AND OTHER DISEASES**
- 7. IMPACTS CAUSED BY EXCESSIVE USE OF NATURAL RESOURCES**
- 8. IMPACTS CAUSED BY SHORTAGE OF COOPERATION OF GLOBAL PARTNERSHIP FOR DEVELOPMENT**

IMPORTANT REMARK IS THAT MAJORITY OF MENTIONED EFFECTS ARE ARISING DIRECTLY OR INDIRECTLY FROM SHORTAGE OF SUPPLYING WITH DRINKING WATER AND SANITATION.

EIGHT MILLENNIUM GOALS ARE LINKED TO HUMAN RIGHTS CHARTER, SO IT IS HOW WE FIND PRESENT MUNICIPALITY OF BOSANSKA KRUPA IN THAT SECOND HALF OF HUMAN POPULATION ON THE EARTH WITHOUT HUMAN RIGHTS FOR ACHIEVING OF MILLENNIUM GOALS. SO, THIS AGENDA 21 FOR SUSTAINABLE FUTURE OF BOSANSKA KRUPA MUNICIPALITY AREA IS REPRESENTING EFFORTS OF POPULATION FOR ACHIEVING RIGHTS OF HUMAN RIGHTS CHARTER OF UNITED NATIONS.

2.2. COMMUNICATIONS

Wires for transfer of information, wire telephones, cable TV and others are part of technical kinete and are on such way transformed to system with more protection and easier usage. This protection is very important, when the impact of the climate change system may cause appearance of very strong winds, which could destroy present wires system placed on poles. Catastrophic situation could cause total information black out and several social, economic and population damages.

PROPOSAL OF PROJECT

1. PROJECT DEVELOPMENT AND IMPLEMENTATION OF TRANSFER OF ALL WIRES IN PROTECTED SPACE IN UNDERGROUND USING TECHNICAL KINETE SYSTEM.

2.3. WASTE

Here we talk about communal waste more. First it is necessary to give support to efforts of cantonal management to organize common system for collection and treatment of waste. Waste material is selected in categories: dangerous, from households, biological, industrial etc. with purpose to secure recycling. We think that two components of that system could be used:

- * Content from sediments of waste waters - composting of materials from Bosanska Krupa area and
- * Wooden waste - as source of energy for remote heating

We consider that Bosanska Krupa would nominate for this two contents.

PROPOSAL OF PROJECT

1. Support to efforts of Una-Sana government for common solving of problems of waste in canton area. Cooperation on parts that could be solvable on local level - composting, and using of wooden waste as source of energy for remote heating etc.

2.4. ROADS

Present roads have partial function and representing danger to population and nightmare of all mothers' cause of endangered children. With a wise program roads could be arranged:

- * Town streets to have sidewalks, bike lanes, slopes for disabled persons in wheelchairs, traffic lights, crossings and green areas,
- * Interurban roads to have bike lanes, drains for atmospheric waters and treatment of polluted waters, signalization and system of protection,
- * Highways not to go into towns but to have transits by standards.

For Bosanska Krupa and Otoka it is necessary to revise plans concerning highway transport, and town transport to be regulated to protect population and Invalids.

Town and interurban transport of population should be organized energetically save and with appropriate time schedule. Big advantage of interurban transport could be existing railway road and it is waiting to be organized.

PROPOSAL OF PROJECTS

1. Project of arranging town streets and communications for Bosanska Krupa and Otoka Bosanska.
2. Project of canton motorways with detour roads for Bosanska Krupa and Otoka Bosanska.
3. Project of construction of two tracks railway as main regional communication for transporting of goods and passengers on route Bihac-Bosanski Novi and possible connections with other communications.



2.5. ENERGY - SUPPLY OF ELECTRIC POWER

All visible parts of electric power system should be arranged in a way of supply by the system of technical kinete.

PROPOSAL OF PROJECT

1. Project of transport and supply with electric power trough protected underground system - common usage of technical kinete.

2.6. TOWN TRANSPORT

System of town transport is necessary to be organizes as service for citizens that includes adding for eventual transport of invalids (kneeling buses and buses with platform for invalids with wheelchairs etc.).

2.7. HEATING

For rational use of natural resources we suggest to organize distant heating at appropriate location (Vranjska). System of distant heating would be used in a way of using bio energy from clearing of forest and reusing of wood waste. Today, in Europe succeeded the most in Austria and we suggest cooperation with embassy of Republic of Austria.

Organizing of district heating would have following preferences:

- * Reduce pressure on natural resources forest,
- * Quality of air improving as result of less burning of woods in apartments and houses in town,
- * Lower cost of living,
- * Use of technical kinete for heat transport, etc.

PROPOSAL OF PROJECT

1. Project of distant heating and transport of thermal energy in area of Bosanska Krupa and Otoka Bosanska.

2.8. TOWN SANITATION AND GREEN AREA CONSTRUCTION AND MAINTANCE

With using of grey water for town cleaning, green areas, fire protection etc, will result in no use of drinking water, what would be adapting of needs to actual possibilities.

2.9. FIRE PREVENTION

Organizing of system of fire prevention in town and suburban and rural area as well as natural (forests and agriculture) surrounding with using of grey water would have great advantages:

- * Rationalization,
- * Lower cost,
- * Less pressure on natural resources,
- * Increasing of value of forest system and agriculture,
- * Using of forest system and agriculture in conditions of several drought,
- * Increasing of production in agriculture,
- * Increasing of water accumulation in conditions of impact of climate change system as basic way of solving actual problem.



3. TOWNS AND SETTLEMENTS

Natural environment and socio - economic system are working parallel and with reciproty. Today cities are representing (metropolis, large cities and others as result of migration of rural population to towns) big risk when natural powers are impacting with damaging and destructive effects. So we find it important to plan careful relation between urban and rural population. For better tomorrow is better to have static town and dynamic rural areas.

4. RIVERS UNA AND KRUSNICA

Difference between area of Bosanska Krupa and other areas of the world is nature complemented with quality of River Una running trough area and river Krusnica been local nature beauty.



River Una as crucial part of this Agenda 21 for quality content requires cooperating with all beneficiaries of this river resource as in Republic Croatia (river spring is in Croatia) and other communities upstream and downstream from Bosanska Krupa. As an interest of total population Agenda 21 would set up collaboration program or Agenda 21 for the River Una catchments area concerning part belongs to Bosanska Krupa.

River Krusnica would be part of Agenda 21, and interested citizens together with Eko Riba Krusnica and author of this agenda would prepare their part of the project.

5. FORESTS

Special program of integral forest management within the Municipality area needs to be prepared with cooperation of canton and federation experts.

PROPOSAL OF PROJECT

Project of «Integral forest management within Bosanska Krupa Municipality area» should be implemented with cooperation of canton and federation institutions.

6. ENERGY

Attention should be given to energy consumption by using less consumable Applications light bulbs, white techniques and appliances, etc. Definitely district heating is one of positive contents. Technical and technological basics for needs and ways of using are to be adapted to less expensive and Less affecting the Nature, etc.

PROPOSAL OF PROJECT

Preparation and implementation of the project for supply of electric power by use of technical kinete.



IMPACT OF CLIMATE CHANGE SYSTEM

In the area of Bosanska Krupa and wider, system of climate changes could cause following changes:

- * More danger from earthquakes - needs to construct counter earthquake buildings.
- * Floods - out of regular seasons and more destructive with more quantity of water. All area at endangered location would have protection with rock walls or similar to prevent soil erosion during floods. It is necessary to examine settlements and towns related to high floods and to undertake some preventive measures.
- * Drought could affect whole biota of the Municipality area. It is necessary to increase quantity of bio-contents on farms and green areas. Together with water retainers/accumulation (fire prevention and irrigation) make possible use for irrigation.
- * Erosion, desertification, and loss of fertility are common results from impact of climate change system.
- * Increase of average main temperature is resulting in less fertile and changes within biota. It is necessary to increase bio-content of lands and follow up production in order to intervene for protection.
- * Elevation of lands - will affect their fertility. With impact of the climate change system higher elevated lands will have more fertility.
- * Generally to have short summary of the impact of the climate change system, we may say that the climate is moving northward 100 km per year and moving in height 100 m per year.
- * Occurrence of stronger winds and even hurricanes will become part of lives. All contents of living in human ecology sphere should be checked in order to prevent hard consequences of stronger winds on present building standards and life-style.



PROTEUS SANGUINUS (Vrelo Krušnice)

7. AGRICULTURE

Present agriculture should be transformed into ecological organic - biological agriculture. In such way would decrease directly influence of synthetic chemical products on the Nature. We suggest making of project for implementation of ecological agriculture on European Union standards.

PROPOSAL OF PROJECT

1. "Ecological farming in Bosanska Krupa Municipality area"
2. "Protecting of agricultural production under conditions of climate change system impact"
3. Preparation and implementation of the project for barley production and building of factory for barley malt.

8. EDUCATION

Education at present depends on federal and canton system. We think that in Bosanska Krupa area we can include present education in Agenda 21. With that cooperation would get different qualities of thinking of young people after they complete their education.

Second part of education or learning during whole life would require making of special project «Life long learning».

Fundamental idea is going out from present situation that could be represented like this:

"We all know what our mother taught us in childhood, what we were taught in school and what life taught us"

Which means, let's give to mother's better opportunity to raise their kids to do it better, in school to use system of theoretical and practical studying trough cooperation in different contents and theirs to enable life long learning as great importance for permanent sustainable future.

PROPOSAL OF PROJECT

1. To coordinate high school education with need of strategic development of Bosanska Krupa municipality, in order to avoid hyper production of personnel without perspective for employment.

9. CULTURE

Cultural activities within municipality area are conducted trough work of amateur clubs and JU Center for culture. Obvious positive trends reflected in big number of traditional manifestations gathering anonymous and renowned artists.



10. HEALTH CARE

In the area of municipality population is using primary health protection in health departments and clinics. Major part of secondary health care is in Canton hospital in Bihac. Reform of primary health care is moving in direction of family medicine, or improving of relations between patients and doctors.

PROPOSAL OF PROJECT

1. To make project "HEALTH FOR ALL" based on equality, promotion and prevention, intersector cooperation, primary health care and inter-territorial cooperation.

11. TRANSPORT

Present system of transport has become worst polluter of our civilization. Let's try to use it with protection from pollution.

PROPOSAL OF PROJECTS

1. Making of project for motorways in Bosanska Krupa municipality with transits around Bosanska Krupa and Bosanska Otoka
2. Making ideas and implementation projects of town streets and squares of Bosanska Krupa and Otoka Bosanska harmonized with technical kinete project.
3. Making ideas and implementation of the project for improvement of railway transport with constructing of two lines on route between Bosanski Novi and Bihac.
4. Making ideas and implementation of project for transport by tracks using railway.
5. Making idea and project for transport of passengers with railway on route from Bosanski Novi - Bihac

12. ECONOMY

Economy is not getting rich but maintenance of life! It is necessary to have adaptation of economic activities with needs for protection of nature, space and environment, and of impact room the climate change system.

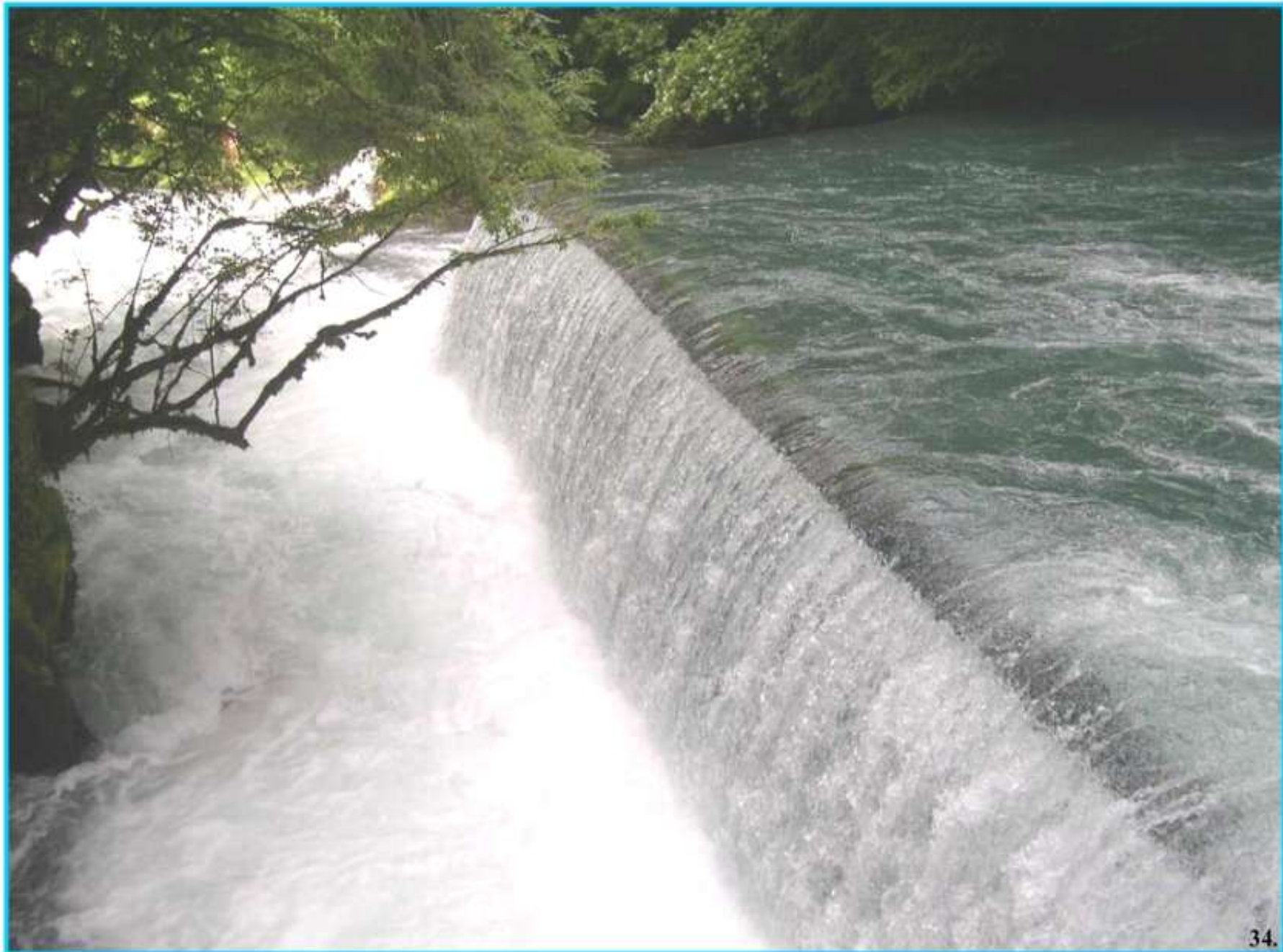
PROPOSAL OF PROJECT

1. Make project of industrial zones and different trade centres on location Ljusina - Pistaline on both side of the road, and Vranjska - Radic road on both sides of future motorway Bihac - Bosanska Krupa.
2. Make project of collection and sales up medicinal and other herbs.

13. TOURISM

We think that existing plan is good and could be used for Agenda 21.

1. Make project for connecting of small river islands in the center of town with suspension bridges.
2. Make project of recreational trail on Big river island (Ada) and along River Krusnica banks.
3. Make project for strolling of Kej-Sokak.



14. SPORTS AND RECREATION

Level of users of high potential of Una and Krusnica river for sport and recreation is directly connected with general situation of social-economical system, as well as system of nature, space and environment protection. For promoting of potentials it is necessary to put together all needed contents and that is idea of Agenda 21.

15. NATURE, SPACE AND ENVIRONMENT PROTECTION

Using of HUMAN as basic value of wealth of the area is representing quality, which is integral part of this document.

Protecting of nature, space and environment is framework for establishment/existence of civilization community. Especially we are putting great importance to content of impact of the climate change system. We think that the tragedy of tsunami was when nature showed power; That is reason for everybody to consider this Agenda 21 as protection of humans as greatest wealth.

Within Bosanska Krupa Municipality area it is necessary to accept rules, laws, and regulations from area of nature, space and environment protection by European Union.

PROPOSAL OF PROJECTS

1. Adoption of nature, space and environment of Bosanska Krupa area to the system of protection of nature, space and environment of European Union.
2. Prepare and implement the project »Announcement on ecology mode by inscription on wooden boards" one small step in the direction of ecological community.
3. Start initiative for municipal council to bring decision about forbidding use of PVC bags in shops and an obligation of using paper ones.





GENERAL PRINCIPLE

DURING PREPARATION AND IMPLEMENTATION OF THE PROJECTS, IT IS VERY IMPORTANT THE ROLE OF EDUCATION OF POPULATION AS BASE FOR CARRYING OUT AGENDA 21.

CONCLUSION

We think that plan of development without any mistake is born dead. That is a reason, for you who think, you could assist, please do it.

We also ask you to cooperate on preparations, implementation, maintenance and control of nature, space and environment protection of Bosanska Krupa Municipality area by implementing of well prepared Agenda 21 for sustainable future of Bosanska Krupa Municipality area, and so in that way to contribute to future of own descendants.

Sustainable future is representing element of life nowadays and tomorrow. It is one of possible systems for existence of our descendants after we won't exist any more.

We think that with this Agenda 21 we make possible the beginning of transition of Bosanska Krupa Municipality area for life today and tomorrow, with better conditions of social, economic and political quality, and conditions of nature, space and environment today and for tomorrow.

Learning, learning and learning is formula of success, representing difference from second to third millennium. That difference is the one deciding about success in third millennium.

Conditions of nature, space and environment will be the base for life of generations after us. Let's try by transfer it from us to our descendants and to enable life to them.

Multidimensional interdependence, interaction and cooperation of people and nature of the Bosanska Krupa Municipality, Canton, Federation and Europe and people of the world is the one we need for success.

We thank to all those who contributed to preparation of this Agenda 21, and will contribute during implementation of this Agenda 21.

In Bosanska Krupa, May 2005

Prof. Dr. Timi Ecimovic
Independent scientist

Eng. Hamdija Grosic
Mayor of Bosanska Krupa