



REPUBLIC OF MACEDONIA  
STATE AUTHORITY FOR GEODETIC WORKS

**STRATEGIC BUSINESS PLAN FOR THE STATE  
AUTHORITY FOR GEODETIC WORKS – SAGW  
2007 - 2010**

Skopje, 2007

## ELABORATION OF THE ACHRONYMS USED IN THE DOCUMENT

SAGR	State Authority for Geodetic Works
RM	Republic of Macedonia
WB	World Bank
IT	Information technology
HR	Human Resources
MF	Market and financing
ICT	Information and communication technology
GIS	Geo information system
GPS	Global positioning system
e-	Electronic
SWOT	Strengths, Weaknesses, Opportunities, Threats
LC	Land Cadastre
REC	Real Estate Cadastre
PIP	Project Implementation Plan
EU	European Union
NATO	Northern Atlantic Treaty Organization
WGS84	World Geodetic System from 1984
UTM	Universal Transfer Mercator cartographic projection
EUPOS	European Positioning System for Determination
NSDI	National Spatial Data Infrastructure
INSPIRE	European Spatial Information Infrastructure
ETRS89	European Terrestrial Reference System from 1989
GRS80	Geodetic Reference System from 1980
IBRD	International Bank for Reconstruction and Development
TS	Total Station
CAD	Drawing software
PC	Personal computer

# STRATEGIC BUSINESS PLAN FOR SAGW

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## **1 EXECUTIVE SUMMARY**

Acting in line with one of the recommendations that refer to the implementation of the Real Estate Cadastre and Registration Project, funded by a loan from the World Bank, SAGW has approached the development of a strategic plan and a time bound implementation plan for the transformation of SAGW into an independent, self funding agency with a Board appointed by the Government RM, by June 30<sup>th</sup>, 2008 (Agreement for a loan from the WB)

This business plan is focused on the demands on different stakeholders, especially the clients with a perspective on all of the processes ‘outside-in’ and has a ‘top-down’ view. Based on an analysis of the requirements of the various stakeholders and the current situation within SAGW it defines the vision, strategies and long- and short term objectives and the activities required to meet these objectives. After its approval by the Government of RM, the Strategic Plan of SAGW will be a tool for SAGW management for governing the development of SAGW.

"During the preparation of this plan, the preparation of the three supporting plans: the strategies for Market and Financing (**MF**), information technology (**IT**) and human resources (**HR**) has commenced as well. These three plans, that contain a lot more detailed information, are integral parts of the strategic planning of SAGW. After the adoption of the Strategic Plan (2007 – 2010) it will provide directions for these underlying plans, and they need to be completed."

## **2 BACKGROUND, PURPOSE AND LIMITATIONS**

### ***2.1 Background***

The State Authority for Geodetic Works during the past 60 years of its existence has been doing works from the field of geodesy, cartography, survey, cadastre and registration of real estate rights on the territory of the Republic of Macedonia. With the recent amendments of the law (October 2005) it was proscribed that all operational fieldwork as public authorization will be done by authorized surveyors and trade companies for geodetic works.

Living in a dynamic world in which the transfer of information, material goods and transactions connected to the real estate is growing faster and faster, leads to a greater and more expressed need for data and information connected to real estate, ownership and geospatial data. At the same time, the development of market oriented economies, the liberation of trade, as well as the influence of several other factors like technological development, the development of ICT (information and communication technologies), have all greatly contributed to the increased need for development and constant improvement of the geospatial data and information. Trends like this also greatly influence the work, present and future, of the State Authority for Geodetic Works and unavoidably bring about the need for its restructuring, modernizing and appropriately positioning on the market.

The registration of real estate rights, as well as the development of modern land administration systems are widely accepted and recognized as essential factors necessary for the development of the real estate market (land, business buildings, residential buildings etc). They are at the same time very important factors for the achievement of a sustainable

economical development that will appropriately meet the needs and demands of the public and the private sector, as well as the citizen at large.

Modern land administration systems, i.e. land information systems, have to unite in themselves a wide range of data and information. In this way they could more successfully meet the increasingly growing demands and needs for accurate, complete and usable registered real estate data, ownership and other rights on that real estate and geospatial information. Systems like this face a lot of challenges in their work. On one hand there is the unstoppable and fast technological development (geo-databases, Internet, wireless communication, modeling standards, open source systems, GIS, GPS etc.), and on the other hand there are the growing needs and demands of the clients, the e-society, e-Government, electronic transactions (when buying and selling real estate), integration of the public data and systems etc.

The State Authority for Geodetic Works, realizing these development flows of the overall surrounding in which it functions, has approached to the preparation of a **mid term strategic business plan**, with the intention to become actively involved in the identification and implementation of the need for reform activities. With the preparation and implementation of the strategic business plan, SAGW will enable the creation of conditions for its own promotion and defining of its place and role on the market as a modern institution responsible for matters and works from the field of land administration.

## ***2.2 Purpose***

The Strategic Business plan of the State Authority for Geodetic Works is prepared so that it poses as a comprehensive strategic document that, in essence, traces the path for the future development of the organization. In other words, this document has the purpose of determining the path between the current situation in which SAGW is and its vision for its future, as well as the identifying the ways for successful passing of this path and accomplishing the projected goals.

The Strategic Business plan is prepared in a way so that it allows for:

- An objective analysis of the situation in which the State Authority for Geodetic Works is now, in terms of its internal organization, availability of resources, technological equipment, and in terms of its relations with the clients, the position on the market, the type and quality of the services that it offers etc.
- Identification and clear definition of the desired future look of the organization, its place and role in the society and on the market and setting up specific and real goals that need to be accomplished
- Identification of priority activities
- Identification and allocation of the needed resources (human, technical, financial) for achieving the set goals and priorities
- Establishing specific ways and methods of monitoring of the realization of the foreseen activities, as well as appropriate mechanisms for revising and amending the Plan, if necessary.

The Strategic plan has the function of a document of high level policy, for internal and external use. The present position of SAGW is clear using a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis and the future position is also clear. It is a mid-term plan with a horizon of 3 years. The various strategic issues have been clearly formulated, along

with the conditions for their realization. The consequences for SAGW as an organization are presented in three separate parts of the strategic plan: the first part is for business processes with a focus on the role of ICT, the second part is for the human resources, and the third part is for the market – business and financing. The strategic plan needs to be updated at least once a year. This document has a character of a ‘living document’.

An internal use of the strategic plan is to make the step from the strategic to the tactical level. In other words, it is a step from a policy document to a business plan. The transforming of strategic issues and their conditions into business goals provides a practical framework for the business plan.

The external use of the strategic plan is to communicate with the Government of the Republic of Macedonia and other key stakeholders and to get the required formal agreement from the Government of RM.

### **2.3 Constraints**

The State Authority for Geodetic Works has constraints in the doing of the operational field geodetic works, which in accordance with the Law on Survey, Cadastre and Registration of Real Estate Rights is done by private trade geodetic companies.

## **3 GOVERNMENTAL STEERING DIRECTIVES AND GUIDELINES <sup>1</sup>**

### **3.1 General governmental steering directives and guidelines**

The objectives of the program of the Government of the Republic of Macedonia for the period 2006-2010 are the improvement of the life standard of the population, increasing employment, more effective fighting corruption, development of democracy, improving interethnic relations, political stability of the country and **EU** and **NATO** integration.

The Economical part from the Program contains reform policies and measures in three basic groups:

- Increasing the competition of Macedonian companies through structural reforms, increasing investments in information technology, technology and knowledge and improving the quality of the labor.
- Making the country more attractive for foreign and domestic investors through offering the lowest taxes in Europe and other stimulations for investing, simplifying the regulations and making them more predictable and transparent work of the state institutions, improving the public infrastructure and providing easier access to finance.
- Improving the quality of the public institutions for implementing reforms, increasing transparency in the work of the Government and fighting corruption determinedly.

A large number of measures in the Program are designed to create conditions for investments and development of the private sector that will enable more employment. That also involves reform measures in the tax field, reduction of the regulations and administrative business barriers, improving the investment climate and promotion of investment potential of the country, increased public investments, increased efficiency of the judiciary system and transparent and predictable work of the Government and state institutions.

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<sup>1</sup> The Work Plan of the Government of the Republic of Macedonia 2006-2010, Skopje, 2006.

In order to assist the accomplishment of what was mentioned before, in the program of the Government there is special attention paid to the realization of the "Electronic government" project, that will enable electronic access to all of the necessary information, documents and forms connected to the work of the Government and a large number of the state bodies. The mid-term work program of the Government of the Republic of Macedonia includes more specific goals, measures and activities that directly or indirectly relate to the work of SAGW, and these were taken into consideration in the preparation of the Strategic Business Plan for SAGW.

### *3.2 Specific governmental steering directives and guidelines that refers to EU and NATO*

The integration of the Republic of Macedonia in EU is founded of the common European values, like the rule of law, respecting human rights and freedom, social justice and responsibility, equal rights and possibilities for all and solidarity. The full membership of the Republic of Macedonia in the European family will contribute to the strengthening of the stability and the economical prosperity of the country.

In order to intensify the integration of Macedonia in NATO the strengthening of democracy will continue, as will the development of the civil society. There will be active participation in the international efforts in the fight against joint security threats and the reforms in the army will continue in order to fulfill NATO standards. In the direction of the Republic of Macedonia becoming a member of NATO, the Government of RM is making efforts for faster and more efficient implementing of the reforms needed for the membership in the Alliance, and these are:

- Reforms of the judiciary systems,
- Reforms for preventing corruption,
- Reforms of the defense sector.

#### **3.2.1 SAGW CONTRIBUTION TO ACCOMPLISHING GOVERNMENTAL STRATEGIC GOALS**

SAGW could contribute greatly towards the accomplishment of the strategic goals of the Government of the Republic of Macedonia from point 3.2 through the implementation of the following activities with which EU and NATO standards would be implemented, and these are:

- define a new national geodetic datum based in **WGS84** for the territory of the Republic of Macedonia,
- define a **UTM** cartographic projection for the territory of the Republic of Macedonia based in WGS84, and
- introduce in the legislation the NATO standards for the preparation of topographic maps in a scale of 1:50.000 and produce these maps for the entire territory of the Republic of Macedonia.
- develop an active **GPS** network in accordance with the **EUPOS** standards,
- develop a National Spatial Data Infrastructure (**NSDI**) in accordance with the **INSPIRE** directive,
- define a new geodetic datum based in **ETRS89** with **GRS80**,
- prepare a database in accordance with the standards of EuroGlobalMap, EuroBoundaryMap and EuroRegionalMap, and
- develop a gravimetrical network for defining the geoid.

### ***3.3 Direct guidelines from the government for SAGW***

- Functional cadastre for regulating real estate ownership.
- Speeding up the procedure for property registration through computerization, being able to receive information about ownership over the Internet, doing transactions and registering them.
- Property registration to be done with only 2 procedures and for it to take 10 days, instead of the current 6 to 8 procedures that on average take 75 days.
- One unified payment for the registration of ownership that will be done in the register.
- Unresolved ownership rights in the buying of property and building office buildings are a huge obstacle for foreign and domestic investors. Incomplete records of property and property transactions and the incomplete cadastre create legal insecurity and prevent the development of the real estate market. For the resolving of these problems the establishment of a sole property register (Cadastre) will be speeded up. This will create the legal security for the investors and it will release a lot of passive potential that could be put into active function – mortgages for business credits, selling to other persons, etc.
- The only register, apart from the credit information, would contain a register of mortgage agreements (collateral) that could be checked by the banks/creditors.
- Easier access to legal sources for business funding: activating a huge dead potential for using real estate as mortgage – through its registration and records in the cadastre.
- Regulating land ownership and development of a functional market for buying, selling and leasing agricultural land. There will be a new, fair and transparent distribution of state agricultural land to the real manufacturers, providing possibilities for providing land for usufruct of individual farmers by a public and transparent procedure. At the same time, the activities for the establishment of the land cadastre will be made faster.
- Easier access for farmers to more cost-effective long-term credits through the registration of real estate (agricultural land, houses etc.) into one cadastre, with which there will be conditions for the banks to accept it as mortgage collateral.
- Digitizing of the cadastre and use of a geographic-information system (GIS).
- Promotion of cash-free payment, e-commerce, e-banking and e-government.
- Administrative and not court registration of ownership. This will significantly speed up the procedure and will reduce the burden of the courts.

### ***3.4 New legal framework - Tanja V.B.***

In order to implement the Strategic Business Plan essential changes are required in the existing legal framework.

The preparation of a new legal framework is ongoing, and the plan is for it to be adopted by the end of 2007. It should above all allow for streamlining of the procedures for the registration of real estate rights in the REC and establishing a modern geodetic cadastral information system.

SAGW is working on the preparation of new Schedules of Fees based on the recommendations from the conclusions of the 68 Session of the Government of RM held on 18.07.2007 within the "Regulatory guillotine" project, that proposes a reduction of the fees contained in the three Schedules of Fees by 50%.

## 4 CLIENTS/CUSTOMERS/USERS

The appended Market and Financing document contains more details on the situation of each group of clients/market segments as well as figures depicting the buying patterns for the main user groups.

The main current and potential users of products and services from SAGW are grouped as follows:

- The owners of real estate
- Private surveying companies
- Notaries
- Attorneys
- Insurance companies
- Financial institutions
- Utility companies and public services
- Real estate agencies
- Municipalities
- Government institutions (especially the Ministry of Agriculture, the State Statistical Agency, Public Revenue Office (Tax Authority) in the Ministry of Finance and the Ministry of Transport and Communications)
- Central Registry

## 5 OTHER STAKEHOLDERS THAN THE GOVERNMENT AND THE CLIENTS

The key stakeholders with the Strategic Business Plan of SAGW other than the government and the clients are:

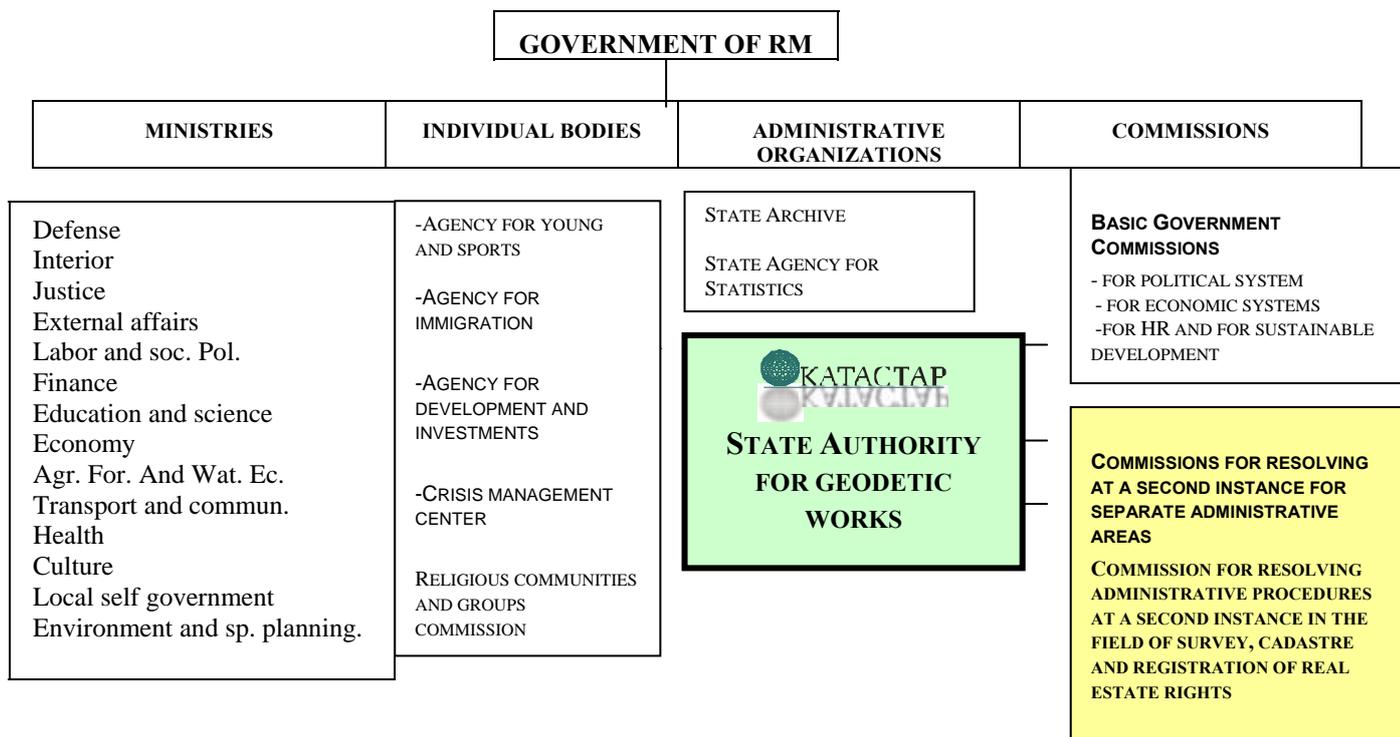
- **SAGW employees** – in general terms, their interest in SAGW is to have job security in a stimulating, meaningful and reasonably well paid position that promotes personal growth.
- **Municipalities** – in their political and similar capacity normally have an interest to preserve the local employment level and to safeguard access to local public service offices
- **Chamber of notaries, attorneys, architects and engineers** – these organizations are active in promoting the interest of their members, thus interested in pricing, quality, delivery times and easy access to data.
- **Professional educational institutions** – are interested in SAGW as a future employer for their students, co-operation in research and development activities and to obtain practical professional training for their students.

## 6 SAGW CURRENT POSITION IN THE SOCIETY AND ON THE MARKET

### 6.1 Introduction and organizational structure

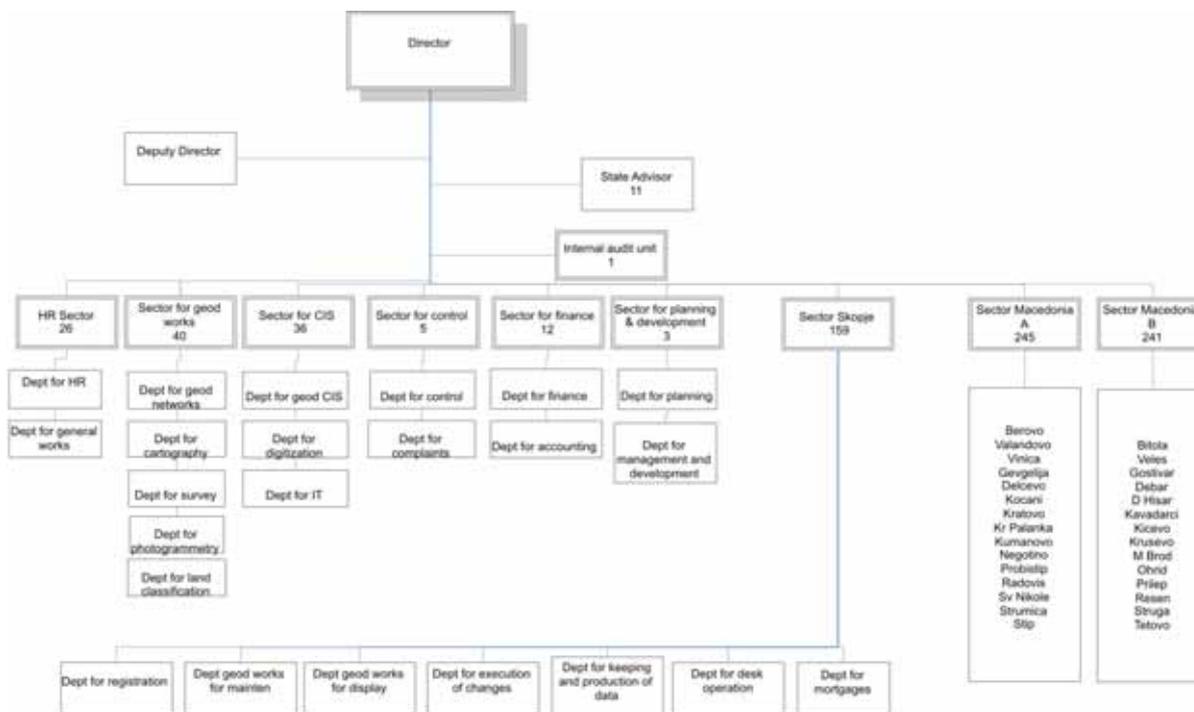
The fundamental law that defines the functions of the State Authority for Geodetic Works is the Law on Survey, Cadastre and Registration of Real Estate Rights (LSCRRER - „Official Gazette of RM, 27/86; 17/91; 84/05 and 109/05,70/06) and the Law on Survey and Land Cadastre (LSLC - ,Official Gazette, No 34 /72 and 13/79).

1. SAGW is an administrative organization within bodies of state administration, with an individual status of a legal person, and for the doing of the works from its jurisdiction it is directly responsible before the Government of RM, Law on Organization and Work of State Administration Bodies (Official Gazette of RM, No 58/2000 and 44/2002)
2. SAGW is responsible for the establishment and updating the changes in the existing systems of the cadastre records on land (LC-Land Cadastre) and for the real estate cadastre (REC) and the changes of registered property rights (transactions, mortgages-collateral etc.), on the entire territory of the Republic of Macedonia.



## Organizational structure of SAGW – current situation

SAGW is organized in **nine** sectors and one unit for internal audit. Each Sector is structured in several departments. All heads of Sectors report directly to the Director of SAGW. There are 12 State Advisors – five specialized in survey and geodetic works, six specialized in law and legal registration of rights, one state advisor for information technology.



## 6.2 Market situation

SAGW does not work according to the market economy principles, although it does make a part of its profit from the sales of its products and services to the users.

The users can be grouped in the following five groups:

1. Real estate owners
2. Notaries, attorneys, court enforcement officers, real estate agencies
3. State institutions and local self-government units
4. Private surveying companies,
5. Central Registry

## 6.3 SAGW Current situation

- **Basic geodetic trends**

The territory of Macedonia is covered with an old geodetic network from the first to the fourth line and a level network of high accuracy that has been established since 1928 and they are not homogenous. All of the cities of Macedonia are covered with rural trigonometric and poligonometric networks and level networks. There are two (2) permanent GPS points that SAGW and the private sector are not currently using. SAGW has around fifty (50) total stations and twelve (12) GPS receivers with adequate software, five (5) digital levelers and thirty (30) software licenses for geodetic data processing. Considering the fact that the field geodetic works are in the

jurisdiction of the private sector, the total stations (TS) are used for control and educations and the GPS equipment is not being used, however it is planned to integrate them into the new active national GPS network.

- **Mapping products**

Macedonia is covered with all types of topographic maps of an older date that are in paper form, as well as raster format. For 60% of the territory of Macedonia there are digital topographic maps prepared in 2004, as well as a digital map of Macedonia within the global map of the world. The entire territory of Macedonia is covered with black and white orthophoto maps. For the preparation of the listed digital SAGW has: a photogrammetric scanner, two digital photogrammetric stations, three data processing stations, two graphical processing stations and two GIS stations, equipped with adequate software, one scanner A0 format and a plotter A0 format.

- **Real Estate Cadastre**

The Republic of Macedonia is covered with cadastral maps that are produced from 1928 to 2004 in scales from 1:500 to 1:5000. These maps are produced with classical and photogrammetric methods. For 190 cadastral municipalities (parts with buildings-houses) there are orthophoto maps in color – digital orthophoto from 2006. Around 30% of the cadastral maps are in digital format, and 70% are in analogue format. For their preparation with a photogrammetric method two analytical photogrammetric stations are used, as well as ten (10) PCs for data processing with the adequate CAD software. The digitizing of the analogue plans is done on twenty (20) PCs.

The real estate cadastre base dates back from the eighties and is in the form of text databases. In the database, which is not centralized, there are only alphanumeric real estate data. The maintenance is done on local servers in the branch offices from which a protection copy of the situation is made every three months. The preparation and the entry of the data required for the displaying procedure is done on a central level on 20 terminals, and the maintenance in the branch offices and the Skopje Sector. In 6 branch offices and in the head office the data from the displaying is processed.

- **Car pool**

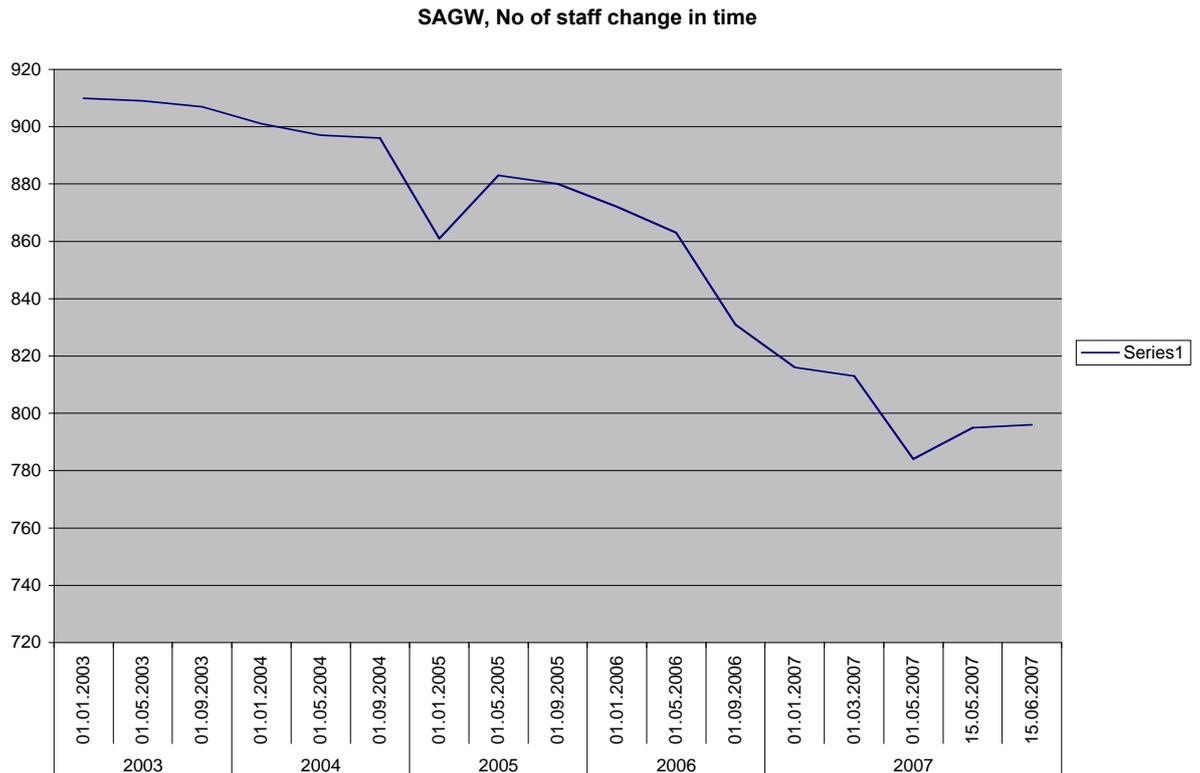
We have available 114 vehicles, 27 of which should be disposed of, all are distributed throughout the branch offices, the Skopje Sector and the SAGW head office.

- **Hardware, Software**

The existing hardware, software and network connecting are addressed in detail in the IT strategy which is an integral part of this strategy.

- **Human resources**

The chart below displays the trend of the total number of employees in SAGW in the period from 2003 to 2007.



- The gender structure is

- Women 44%.
- Men 56%.

- The education structure of the employees:

- University level 20 %.
- Undergraduate level 17 %,
- Secondary education 62 %,
- Elementary education 1 %,

#### **6.4 Economic and financial situation**

For its functioning The State Authority for Geodetic Works uses funds from the: The Budget of RM, and at the same time it makes income from self-funding activities. Besides the named sources, SAGW is using funds (loans and donations) for the implementation of different projects: credit from the World Bank for the realization of the Real Estate Cadastre and Registration Project, Dutch Grant, Japanese Grant for the preparation of basic state maps for GIS in Macedonia, Sida Project for the strengthening of institutional capacity, etc.

A table and a graphical display of the SAGW income from 2000 to 2007, divided in accounts that SAGW has available

PRI HODI - RASHODI 2005- 2010 g.

(buxet i samofinansiranje bez grantovi i krediti bez bugetska podrška na krediti tot)

stavka	О П И С	2005	2006	2007	2008	2009	2010
401	osnovni plati i nadomestoci	153,130	160,851	168,570	171,298	175,000	175,000
402	pri donesi za socijalno osiguruvawe	63,408	65,939	66,190	68,392	69,835	69,835
403	ostanati pri donesi od plati	376	399	440	490	501	501
<b>40</b>	<b>plati, naemni ni i nadomestoci</b>	<b>216,914</b>	<b>227,189</b>	<b>235,200</b>	<b>240,180</b>	<b>245,336</b>	<b>245,336</b>
420	patni i dnevni rashodi	15,249	8,717	10,500	6,000	6,000	6,000
421	komunalni uslugi, greewe, komunik, transport	31,894	35,487	42,283	27,692	27,000	29,458
423	siten inventar, alat i dr. materijal	6,113	4,134	11,500	7,500	7,500	8,000
424	popravki i tekovno odr`uvawe	5,920	4,951	13,500	8,000	8,000	14,000
425	dogovorni uslugi	31,164	18,284	27,720	10,000	10,000	10,000
426	drugi tekovni rashodi	6,949	10,546	38,500	21,500	21,500	24,000
<b>42</b>	<b>stoki i uslugi</b>	<b>97,289</b>	<b>82,119</b>	<b>144,003</b>	<b>80,692</b>	<b>80,000</b>	<b>91,458</b>
481	grade`ni objekti, izgradba i rekonstrukcija	184	0	3,000	0	0	3,000
483	mebel, oprema, vozila	10,057	891	26,000	1,000	5,000	5,000
485	drugi nefinansijski sredstva	8,654	11,796	43,500	26,000	60,258	60,000
<b>48</b>	<b>kapitalni rashodi</b>	<b>18,895</b>	<b>12,687</b>	<b>72,500</b>	<b>27,000</b>	<b>65,258</b>	<b>68,000</b>
<b>4</b>	<b>RASHODI</b>	<b>333,098</b>	<b>321,995</b>	<b>451,703</b>	<b>347,872</b>	<b>390,594</b>	<b>404,794</b>
smetka	О П И С	2005	2006	2007	2008	2009	2010
637	buxetski sredstva	256,978	230,215	241,703	247,872	290,594	304,794
787	samofinansiranje	82,144	124,251	210,000	100,000	100,000	100,000
	<b>PRI HODI</b>	<b>341,127</b>	<b>354,466</b>	<b>451,703</b>	<b>347,872</b>	<b>390,594</b>	<b>404,794</b>
	% na samofinansiranje	<b>24%</b>	<b>35%</b>	<b>46%</b>	<b>29%</b>	<b>26%</b>	<b>25%</b>

smetka	О П И С	2005	2006	2007	2008	2009	2010
785-1	japonski grant	10,611	0	0	0	0	0
785-2	holandski grant	10,958	21,955	318	0	0	0
786	kredit od SB	9,371	73,803	153,000	290,900	68,000	0
637	buxetska podrška na kredit od SB	1,279	14,558	28,421	35,800	14,200	0

## ***6.5 The Real Estate Cadastre and Registration Project***

On June 6th, 2005, in the office of the World Bank in Skopje, the Agreement for a Loan between the Republic of Macedonia (recipient of the loan) and the International Bank for Reconstruction and Development (IBRD) for the funding of the project "Real Estate Cadastre and Registration" was signed, and the implementer of this project is the State Authority for Geodetic Works (SAGW) - Skopje.

### **Implementation of the project**

- Time period of 4 years (June 2005 – June 2009)
- Implementers: The State Authority for Geodetic Works in all of the 29 local offices for survey and cadastre, and the Sector for survey and cadastre – Skopje.

### **Project components**

- *Component 1* : Completion of the real estate cadastre
- *Component 2*: Institutional development and improving the services that the State Authority for Geodetic Works (SAGW) is offering
- *Component 3* : Developing the land policy
- *Component 4* : Project management

## **7 IMPORTANT TRENDS AND THEIR IMPACT ON THE WORK OF SAGW**

The State Authority for Geodetic Works has the intention of transforming into a modern, market-oriented institution that will be focused on its clients, their needs and demands, and it will be able to efficiently offer accurate, high quality and timely services and products in accordance with the modern principles and trends. Of course, for the successful realization of this intention, in accordance with its strategic determination and priorities, SAGW will have to also keep up with and implement global trends that exist in the field of information technology, the systems for land administration, geo-spatial data etc (Internet technology, e-Government, NSDI, INSPIRE...).

Below is a display of the most significant modern trends that in any case have impact on the strategic development of The State Authority for Geodetic Works.

### **– Customer/user-orientation**

The trends in this field are such that modern cadastres are becoming more and more customer-oriented, they monitor and analyze their needs, present and future demands, they listen to their opinion and suggestions, they monitor the level of their satisfaction with the offered services and in accordance with this they plan their further development, the improvement of the existing services and products, the introduction of new demanded products and services. The State Authority for Geodetic Works, in its work, should increasingly develop this approach of higher client-orientation and develop and encourage the perspective of viewing things "from the outside - in".

- **Using modern information and communication technology (ICT)**

In the past period we have witnessed an especially significant and fast progress of geo-information and communication technology in the global frame, the development of the Internet and the possibilities connected to it, the technologies for the development and management of databases, positioning systems, wireless communication, etc. All of the above listed has a serious impact both on the development of modern cadastral systems and infrastructures of geo-spatial data. The use of modern technology leads to the need of land administration systems to be dynamic and constantly revised and improved. They should be more cost-effective, better and cheaper.
- **Developing and using of digital data, products and services**

Every modern cadastral system is based on the development and using of data, products and services in a digital environment. In SAGW there are standardized procedures for the creation of digital graphical data and of course in future this should be continued with the complete digitizing of the data and creating digital data-sets. The future of SAGW is in its transformation into a completely "digital organization" based on completely digital data, products and services. .
- **Internet technology-orientation**

One of the perhaps most characteristic and important trends lately is the trend of providing on-line cadastral data, products and services over the Internet. It is a global trend is for the on-line users to slowly yet surely replace the users that go to the office for their needs and demands. The using of Internet technology creates the possibility for a faster and more effective access and finding of the requested data and information, and at the same time it enables the expanding of the possible on-line products and services. This trend fits in with the modern concept of an **e-Government** that is taking a more and more important place in the Republic of Macedonia and is included in the Work Program of the Government of the Republic of Macedonia for the period 2006-2010. Fully aware of the existing trends in this part, the State Authority for Geodetic Works recognizes the implementation and development of e-technology, above all the e-cadastre and starting with Internet based service providing for its clients in its work as one of its priorities.
- **Cost recovery**

The organizations responsible for the functioning of the cadastral information systems and the production of geo spatial data i.e. land administration systems mostly function on the cost recovery principle. Cost recovery is a condition for achieving financial sustainability and financial independence. The strategic determination of the State Authority for Geodetic Works is for it to move in the direction of achieving self-funding and financial sustainability. For accomplishing this situation an analysis of the costs is required as is the creation of an appropriate price policy with the setting of the fees for all of the services and products of SAGW, however with a policy of a more efficient, more effective and more responsible utilization of the available financial, technical and human resources.
- **Data sharing/exchange**

There is a strong trend of sharing and exchange of spatial data (geo-data, names, addresses, ownership data, rights and restrictions on the real estate etc.) between different government organizations and institutions, on a local and an international level. An obvious example of this trend is the global efforts for the creation of

**National Spatial Data Infrastructures (NSDI)**, and the decision of the EU for the establishment of a pan-European spatial data infrastructure, **the INSPIRE directive**. This highly emphasizes the need of data standardization, standards for storing, transfer and exchange of data.

– **Outsourcing**

In many countries, the organizations responsible for the creation and maintenance of land administration systems are already widely using the outsourcing method for different types of tasks and activities. This concept is used for example for a certain type of services connected to ICT (information and communication technology), like the development and maintenance of applications, maintenance of the ICT equipment, and other types of services connected to the cadastre like the production of maps, digitization, data conversion etc. The State Authority for Geodetic Works should carefully consider the possibilities and make the right decisions for the implementation of the outsourcing concept for certain activities, and what should be kept in mind is the availability of resources, human and other, and by all means the viability of these decisions.

– **Partnership with the private sector**

Although in many countries the primary responsibility for the establishment and maintenance of the cadastral systems, i.e. the land administration systems is in the hands of government institutions and agencies, still in the global frame in this field the role and involvement of the private sector is increasing. Often private companies are hired in the part of providing various IT services, maintenance of hardware and software, in the part of digitization of cadastral plans, etc. There is great justification for the increased strengthening of the partnership between the private and the public sector in the field of land administration. This partnership helps reduce or avoid undesired competition between the private and the public sector and instead of a conflict it promotes cooperation between these two sectors, and at the same time allows for the strengthening of the business processes and the organizational structures, it leads to greater potential for providing better, higher quality and faster services, encouraging the customer-oriented approach to the work and the improvement of the existing services and creating and developing new ones that are the clients and the market demand.

- Active national GPS network

The active national GPS network is a network of dispersed permanent stations (virtual reference stations) throughout the territory of Macedonia, which is an immediate materialization of the spatial coordinate reference system, which provides the datum for the national GPS network. With the implementation of the network by the SAGW, there will be a homogenous network on the whole territory of Macedonia, which is missing at the moment. Following the implementation of the network, there will be a drastic speeding up of the geodetic measurements, a foundation for the establishment of a new geodetic datum and a nonstop Internet support of all the users of the GPS network. It will thus provide continuous operation of the GPS network, monitoring the movement of the Earth's crust on a state level. All this emphasizes the need for urgent establishment of an active GPS network by SAGW.

#### - Gravimetric network

The gravimetric reference system is a collection of materialized points throughout the whole country. The absolute values of the acceleration of the gravity for a certain period of time, in which there is gravimetric determination of the absolute and relative acceleration of the strength of gravity and calculation of gravimetric strength. The establishment of a gravimetric network throughout the Macedonian territory will be of benefit to the geodetic activities. There will be data available for the determination of the geoid, i.e. the zero level for the territory of Macedonia. This will immediately enable the use of GPS for precise determination of altitudes, i.e. complete utilization of GPS for conducting geodetic works in Macedonia, something that is missing at the moment.

#### - NSDI – National Spatial Data Infrastructure

The National Spatial Data Infrastructure (NSDI) comprises technology, criteria and standards for the promotion of geospatial data sharing between providers and users. The NSDI provides a possibility for the data from different levels and of different character to be compatible. As SAGW is the legal provider of national basic spatial data (topographic, cadastral, etc.), SAGW has an obvious and prominent role in establishing the Macedonian NSDI. As Macedonia aspires to join the EU, its NSDI should be designed in accordance with the EU INSPIRE directive. This will strengthen SAGW's position as a leader in developing an effective use of geospatial information in Macedonia. It will further enable harmonization with the NSDIs in the countries of the EU, while the access for all of the national users and clients of spatial data will be quite simple and fast.

#### - Geo Information System

A Geographic Information System (GIS) is an integrated computer system with the adequate hardware and software support, of interactive connection among the graphical (vector and raster) and alphanumeric geospatial data, in one unique database. GIS provides possibility for entering, control, integration, management, analysis and display of the data contained in the database in a GIS environment. With the implementation of GIS in the work of the work of SAGW, there will be a fast access to all data enabled, speeding up a large number of work tasks for entering, updating, analysis, manipulation and archiving of data, as well as enable inter-compatibility of all of the geo-spatial data that SAGW has for their connection.

#### - Remote sensing

Remote sensing is data collection from a distance, using satellite and aerial photographs. Remote sensing serves for collecting data for new and updating the existing databases/products. In the utilization of satellite images in remote detection for collecting data, special emphasis is placed on their geocoding, because standardized parameters should be used on a national level in accordance with the parameters of the national coordinate system. By using remote detection in the work of SAGW faster data collection will be enabled for the new and updating of the existent products of SAGW, as well as standardizing for integrating the satellite images in the national coordinate system of Macedonia through taking on a leading role in accuracy control.

## 8 COMPETITORS

SAGW is the only national legally mandated organization to provide cadastral data and services and to capture, produce and maintain the national geospatial data for Macedonia. Accordingly, there is no direct domestic competition. However, international companies such as Google Earth are introducing new services that could emerge as competing with the services of SAGW.

## 9 SAGW PRODUCTS AND SERVICES

### 9.1 SAGW products and services

Out of the approximately thirty types of products and services SAGW offers, according to their characteristic (attributes and specific traits) they are grouped in twelve groups of products and services.

No	Product/service	2005	2006	2007	2008	2009	2010
		Quan.	Quan.	Quan.	Quan.	Quan.	Quan.
1	Issuing property certificates REC	89,588	83,276	108,259	140,736	182,957	237,845
2	Issuing possession certificates (LC)	74,131	80,852	56,596	39,617	27,732	0
3	Changes in the database (transactions)	38,030	45,908	50,499	55,549	61,104	67,214
4	Mortgages	2,920	6,159	6,775	7,452	8,198	9,017
5	Certificates / verifications	23,673	18,669	20,536	22,589	24,848	27,333
6	Certificates - background	13,989	12,707	11,436	10,293	9,263	8,337
7	Copies from cadastral plans (+with coordinates)	26,186	40,467	38,444	36,521	34,695	32,961
8	Registration of rights (maintenance and individual)	7,366	13,881	14,575	15,304	16,069	16,872
9	Requests from private surveying companies	0	22,015	23,116	24,272	25,485	26,759
10	SAGW – Cadastral plans A0 format	673	536	590	649	713	785
11	SAGW – Topographic maps	87	45	54	65	78	93
12	SAGW – orto photo products	0	0	50	100	150	200
	<b>TOTAL</b>	276,643	324,515	330,929	353,147	391,293	427,417

## 10 SWOT ANALYSIS

The results from the SWOT analysis are presented in the below table

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• The only institution for cadastre and geospatial data</li> <li>• Centralized management of the resources deployed for REC</li> <li>• Geodetic and legal staff with experience</li> <li>• The competent institutions show understanding for new employment (expert staff) – alleviated/facilitated regime for employment</li> <li>• Unique wealth of information in its archive</li> <li>• Integrated system for registering real estate and real estate rights.</li> <li>• Direct accountability to the Government of RM</li> <li>• Good competence and long experience within the organization</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Insufficiently trained staff</li> <li>• Poor motivation of the staff, no possibility for providing stimulation through the salaries</li> <li>• Existence of corruption</li> <li>• No strategy for monitoring the performances in the work</li> <li>• No written work procedures</li> <li>• Insufficient market and client orientation in the provision of SAGW services</li> <li>• Insufficient informing and experience of the SAGW employees concerning the strategic decisions (self-funding, market orientation, client relations, change of the status, etc.)</li> <li>• Limited management of the human and financial resources for the immediate superiors</li> <li>• No staff and resources required for the verification of the quality of the data received from the private sector</li> <li>• No strong connection between the Authority and the University</li> <li>• A lot of long legal procedures for land transactions</li> <li>• Lack of an intranet connection between the head office and the branch offices and no Internet connection in the branch offices.</li> <li>• Limited knowledge of the demands of the clients - "Who is our client and what is his/her situation"</li> <li>• Lack of marketing resources and experience</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Real Estate Cadastre and Registration Project – WB loan.</li> <li>• In SAGW there is an ongoing project for the strengthening of human capacity</li> <li>• New employment for young and competent staff</li> <li>• A strategy for human resources is being</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Frequent changes in the legal regulations</li> <li>• Continuous outflow of quality staff</li> <li>• Not having sufficient capacity for implementing the changes</li> <li>• Competition from international Internet browsers or data providers (Google earth etc.)</li> </ul>

<p>created</p> <ul style="list-style-type: none"> <li>• A new institutional framework which will provide more freedom in the planning of human and financial resources</li> <li>• Cooperation with high education institutions / Faculty for Civil Engineering</li> <li>• Connecting to other databases from other government institutions</li> <li>• Development of a large potential (demand) on the market for the products and services of SAGW (current and future)</li> <li>• The need for introducing new products and services</li> <li>• The positive climate and support from the general public for the success of the reforms in the Cadastre</li> <li>• High level of awareness of the Government of RM about the importance of the cadastre for the improvement of the investment climate and the overall economic development of the state</li> <li>• Increased level of economic activity in Macedonia results with an increased demand for the SAGW products and services</li> <li>• The IT technology is becoming more and more accessible in the society which results in increased possibilities for SAGW to serve its clients and users more effectively</li> <li>• The general market trends are creating potential for the development of new products and services</li> <li>• Strong interest from the Government of RM for joining EU which will facilitate the improvement of the SAGW routines and procedures (standardization, cooperation with similar institutions in other countries)</li> </ul> <p>The international trend for creating a National Spatial Data Infrastructure opens up possibilities for SAGW – through proactive work – to become the coordinator in Macedonia</p>	<ul style="list-style-type: none"> <li>• A threat for some institutions/subjects of endangering the role (position) of SAGW in the providing of some of its products and services</li> <li>• Insufficient informing and/or interest of the clients, i.e. the market, for using SAGW products and services (current and future)</li> <li>• Lack of a legal frame for data sharing</li> <li>• Computers without licensed software.</li> <li>• The demands of the users are far from optimal (not enough marketing)</li> </ul>
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## **11 SAGW BUSINESS IDEA, VISION AND MISSION**

### **11.1 VISION**

The State Authority for Geodetic Works (SAGW) is an effective, fast, modern, secure, reliable and trustworthy organization for the service of its users. SAGW is a leader of all geodetic, cartographic and cadastral matters and a guardian of the legal security of the geospatial data and data for the real estate rights in the Republic of Macedonia.

### **11.2 MISSION:**

Completion, development and maintenance of the real estate cadastre, development of GPS and gravimetric networks and maintenance of geodetic networks, production and updating of new cartographic products, as a basis for the development of a national geospatial database. SAGW is implementing modern international experiences as well as modern information and communication technology. With its work, SAGW is providing support for the development of the real estate market in RM, promoting a favorable investment climate, as well as support for the harmonization with the international (EU and NATO) standards. It functions on the principles of market orientation and cost recovery.

### **11.3 BUSINESS IDEA:**

SAGW provides the public and business sectors, as well as the general public, with reliable geospatial and real property data when they need it, thus contributing to economic growth and European integration.

## **12 STRATEGIES/PROGRAMS**

In order to meet the vision, SAGW has adopted the below strategies/programs:

1. Coverage of the entire territory of RM with a real estate cadastre, active GPS and gravimetric network, with mapping products and developing the geospatial database (strategy for the establishment of REC which is described in the Project Implementation Plan PIP of the World Bank)
2. Increasing market orientation and increasing the cost recovery (level of self-funding) through better informing about the demands on the market and developing new products and services in order to fulfill these needs
3. Proactive relation towards its stakeholders in the land policy creation process and in the development of the real estate market,
4. Providing competence in the cadastre, cartography, geodetic works, providing products and services on the market in way which is suitable to the needs of the users.
5. Using modern information technology and digital products in order to satisfy the needs of the clients (and other stakeholders) and for improving internal efficiency and work conditions – at the same time focusing on preserving safety, security and reliability of its data.

**12.1 Strategy / Program:** Coverage of the entire territory of RM with a real estate cadastre, active GPS and gravimetric network, with mapping products and developing the geospatial database.

Long term objectives:

- Covering the entire territory of RM with a real estate cadastre, including cadastre maps by Dec. 2009.
- Covering the entire territory of RM with digital topographic data with cartographic products by Dec. 2010.
- Covering the entire territory of RM with an active GPS network and preparing a project for the development of a gravimetric network, as well as preparing a study for a level network with high accuracy, by Dec. 2010.

Short term objectives:

- Updating all cadastral maps (reambulation) of the municipalities that are included in the WB project by June 2009.
- Producing new digital cadastral maps based on orthophoto images for urban areas included in the WB project by Dec. 2008.
- Producing new digital cadastral plans based on aero photography for 80 000 ha. by June 2008.
- Establishing a real estate cadastre for 10 cities in RM by Dec. 2008.

**12.2 Strategy / Program:** Increasing market orientation and increasing the cost recovery (level of self-funding) through better informing about the demands on the market and developing new products and services in order to fulfill these needs

Long term objectives:

- The self-funding portion of the income of SAGW is 25 percent by 2010.
- The function for marketing and sales with adequate resources established by the first quarter in 2009.

Short term objectives:

- Approved realistic fees for all products and services of SAGW, by the first quarter of 2008.

**12.3 Strategy / Program:** Proactive relation towards its stakeholders in the land policy creation process and in the development of the real estate market,

Long term objectives:

- Advisory boards for geospatial information and for cadastral information that represent the key stakeholders established by January 31<sup>st</sup>, 2009.

Short term objectives:

- Elaborating a proposal with background information and purpose for the establishment of advisory boards, submitted to the Government before the end of Dec. 2007.

- Detailed Market and Financing strategy finalized within three weeks after the adoption of this business strategy by the Director of SAGW

**12.4 Strategy /Program:** Providing competence in the cadastre, cartography, geodetic works, providing products and services on the market in way which is suitable to the needs of the users.

Long term objectives:

- The structure of SAGW is redesigned and the organization is well adapted to its purpose, implemented by the end of the fourth quarter, 2010.
- SAGW is equipped with a competent, active, motivated and service-minded staff, according to the needs of the users, implemented by the end of the fourth quarter, 2009.

Short term objectives:

- Revision of the organization structure implemented by the end of the fourth quarter, 2008.
- All of the functions are described with results conditioned by the remuneration system and approved by competent services/bodies by the end of the fourth quarter, 2008.
- A mechanism in place for ensuring that the surplus of employees will have an opportunity to be re-educated and reallocated within the organization for support of all functions experiencing a backlog, by the end of the first quarter, 2008.
- Detailed HR strategy finalized within three weeks after the acceptance of this business strategy by the Director of SAGW.

**12.5 Strategy / Program:** Using modern information technology and digital products in order to satisfy the needs of the clients (and other stakeholders) and for improving internal efficiency and work conditions – at the same time focusing on preserving safety, security and reliability of its data.

Long term objectives:

- Providing full funding of all of the planned IT investments before the second quarter of 2009.

Short term objectives:

- Elaborating a proposal to the Government for the improvement of the cadastral system – based on the IT strategy – with basic information for the needs for investments, potential benefits for the society in general and for the integration into EU etc. before the end of Dec. 2007
- Elaborating a document for financing that contains benefits from the digital cadastral system, needs and use for investment, etc. as a foundation for negotiating with potential funders, by the end of 2007 – Private and Public Sector Partnership
- Detailed IT strategy finalized within three weeks after the basic acceptance of this business strategy by the Director of SAGW.

## **13 ACTIVITIES**

The detailed description of the activities for each of the objectives, with dead lines, responsible persons, performance indicators, measures for implementing and funds necessary for the realization are described in the activity plan and are an integral part of the Strategy. (Annex xx)

## **12 ORGANIZATION**

The activities from the strategic plan will be organized within SAGW in coordination with the person responsible with the organizational units.

## **13 REPORTING ROUTINES**

The working groups for market and financing, for information technology and for human resources continue their work in the function of monitoring the realization of the Strategic Business Plan; they meet when necessary and prepare quarterly reports for the level of realization of the strategic business plan. The coordination of the work of the working groups is done by a person appointed by the Director of SAGW. The staff of SAGW reviews and adopts the quarterly reports prepared by the working groups and makes decisions regarding changes of the strategic plan in accordance with the needs of SAGW.

***The approved Strategic Business Plan of SAGW, by the Government of the Republic of Macedonia, will serve as a tool of the management of SAGW for governing its development.***