Editorial

Dear readers,

Here we are, at the end of 2009, with our fourth issue of the newsletter «DABA» edited by the «Agripol» section of Enda Dialogues Politiques Prospectives (enda diapol). In the same logic as the previous three issues, the editors of the fourth issue address themes related to agriculture, focusing on Bt cotton.

This issue mainly focuses on the experience of Burkina Faso as regards the adoption, popularization and marketing of Bt cotton. The different experiences in the different columns are the results of field investigations carried out with various stakeholders working on the issue, and they have followed closely the process of introduction of Bt cotton in this country.

Burkina Faso is the second african country, after South Africa, to have adopted the cultivation of GMOs. Thus, cotton has been used as a testing ground since 2002. Yet, it is only after a legislative framework was developed and approved by researchers that the choice of Bt cotton has been endorsed by all the stakeholders involved in the development of the cotton sector in Burkina Faso. In addition, it should be noted that the option for introducing GMOs in Burkina was followed by a debate between proponents of traditional farming led by civil society organizations and supporters of the use of biotechnology to develop a modern and competitive agriculture. Also, the experience of Burkina has been subject to analysis in the hereby latest issue of the year.

Throughout the different columns: Behind the Scene, Cross-Perspectives, Testimony and Focus on ... among others, the editors have tried to highlight some specific features of the experience of Burkina Faso in its approach to Bt cotton adoption, and compared them to the South African experience. For example, the testimony of Mr. Compaoré Ali, the Managing Director of SOCOMA, is quite expressive. It describes the reasons that led Burkina in this approach and the merits of this strategy.

The Breaking News column addresses climate change issues which have now become one of the real challenges of the 21st century. The article describes the results of the seventh Global Forum on Sustainable Development held in Ouagadougou, in October 2009. «Climate Change, What Opportunities for Sustainable Development» was the theme of the meeting. That forum gave the opportunity to african policy-makers to meet and harmonise their positions before the forthcoming 15th Conference of the United Nations Framework Convention on Climate Change to be held from 7 to 18 December 2009 in Copenhagen, Denmark. Finally, the section Alternative section focuses on a hybrid form of farming halfway between conventional and biological agriculture, commonly known as Integrated Production. This form of production is advocated by the WFP for sustainable environment-friendly agriculture. While wishing you Happy New Year, the «Agripol» section team would be pleased to have you among their prospective faithful readers.

Enjoy your Newsletter!

COTTON GROWING IN AFRICA

Burkina Faso opts for GMOs

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A vital issue for African agriculture

INTERVIEW

Mr. M. ALI COMPAORÉ, THE MANAGING DIRECTOR OF SOCOMA

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COTTON GROWING IN AFRICA

Burkina Faso opts for GMOs

Africa has been on the fringes of the agricultural revolution experienced by Europe and Asia during the last century. That Agricultural Revolution largely rested on the development of new means of production, but also and especially, on the biotechnological revolution which provided for highly yielding varieties of plants and animal breeds (WFO, 2000). Similarly, Green Revolution has reached levels of production and productivity sufficient enough for some countries to significantly reduce their under-nutrition (China, India) or even to become net exporters of agricultural products (Thailand, Vietnam, Indonesia). It is in the momentum Burkina Faso has tried to register by welcoming GMOs, including GMC.

How to face the challenge of global competitiveness and profitability of cotton industry? In response to this concern, Burkina Faso has been engaged in the production of genetically modified cotton (GMC). After several years of experimentation, the country has finally launched its first marketing of GMC. What a long way gone! Let us go back to the events that led it to switch from conventional cotton growing to GMC.

Representing over half of export revenues in Burkina Faso, cotton production suffered crisis in the mid 90s. It is precisely in 1996 that all started. That very year indeed, the country was facing a major parasite pressure. That terrible massive infestation compelled Burkinabe cotton farmers to make about 20 parasitic treatments during the same agricultural campaign. Thus, the commonly insecticides used were questioned, because of their ineffectiveness and their high level of toxicity. In fact, Burkina Faso was facing an unprecedented parasite resistance. The direct consequence of this phenomenon could be observed throughout the fall in production, which indirectly resulted into drastic reduction in export revenues of the country.

That situation led to a decline in the revenues of three million people whose livelihood is derived from cotton growing. The social upheaval that resulted from it in cotton growing areas provoked discontent among producers. The problem took a national dimension. The Government had then to remedy it immediately, for fear of being exposed to a deep socioeconomic crisis. The country therefore started to seek for solutions.

When it was known that there was a cotton plant that could resist pests (coprophagous caterpillars) notably Helicoverpa Armigera, Burkinabe Faso immediately showed a keen interest in such farming. For that purpose, the government took all the institutional measures to ensure a successful introduction of GM cotton. The issue was raised and debated in the National Assembly, and a law was passed in 1999. The adoption of this law led to the creation of an agency entitled to monitor and supervise the cultivation of Bd cotton in Burkina. It is the National Biosafety Agency (ANB) which was entrusted with the mission of establishing a watchdog, monitoring and supervision device for the introduction of GMC in Burkina Faso.

With such an institutional arrangement, research could be carried out. The first results were released in 2003. All the stakeholders in the country (policy-makers, cotton producers, cotton companies, civil society actors, etc.) had been invited to share the results of those experiments. Some concerns were raised, and the research gradually readjusted according to the inputs and concerns of those mentioned above.

That was the case for Monsanto genetically modified cotton plants. Since they do not grow, it was not suitable for hand harvesting practised by the cotton growers of Burkina Faso. Thus, the Bacillus thuringiensis Cry1(ab), Cry1(ac) genes have been introduced in three local varieties of the country. The experiment was successful with only two varieties: Stam 59 and Fk. This exercise helped settle the debate over the ownership of GMC used in Burkina Faso. The seed belongs to Burkina Faso and the technology belongs to Monsanto. So, it is through a joint ownership that the State of Burkina Faso and Monsanto manage the GMC. The acquisition of Bd cotton seeds ownership, which put some states in a cold sweat, was resolved in that way in Burkina Faso.

The initial promising results are observable

Burkinabe researchers confirmed that the number of treatments for Bd cotton has actually been reduced (from 6 to 4 times). For this year 2009/2010 campaign, producers who planted Bd cotton in Burkina Faso did not need to administer the last two recommended treatments. This reality is a pleasant surprise then. However, one should be cautious when saying that, because this country is experiencing initial marketing campaign. As for the output, results from experiments display an average increase of 30%, that is to say, 1, 400 kg/ha as compared with 1,100kg/ha for conventional cotton.

As a whole, the results of GMC of the previous campaign did arouse cotton growers’ keen interest in Bd cotton so that during that very campaign, there was a great shortage of Bollgard II seeds. This lack of seed led some farmers to shift away from conventional cotton growing considered to be painful. Faced with this situation, it is possible that for its initial marketing of GMC, the national production of Burkina Faso experienced decrease.

If such a contingency were to occur, the blame of the poor performance would not be on Bd cotton, but on the fact that some producers refused to cultivate conventional cotton because of the lack of Bd seeds. As for the cost of the Bollgard II seeds, which is 27500 FCFA for 12 kg/ha, cotton companies believe it is affordable with regard to the benefits of Bd cotton; however, for producers, it is still relatively expensive.

Unlike the other continents which are committed to mass-produce and accumulate knowledge and technologies to initiate an economic and social development, Africa still is facing huge challenges to meet the social demand in such vital sectors such as food, health and education. Faced with this situation, Burkina has decided to welcome genetically modified organisms. And it is the cotton sector, which is the main source of revenue for the country, that first allowed in GMOs with Bd cotton. Will Burkinabe farmers be able to improve their incomes? Will the country keep its leading position in Africa with Bd cotton? Only time will tell.
CLIMATE CHANGE

A vital issue for African agriculture

Ouagadougou, the capital city of Burkina Faso, hosted the 7th Global Forum on Sustainable Development. During the workshop, policy-makers, experts and NGOs, among others, pondered over the theme: «Climate change, what opportunities for sustainable development?» However, of all the sub-themes dealt with, it is the impact of climate change on agriculture that catalysed most of the debates.

Climate Change: What Opportunities for Sustainable Development

A vital issue for African agriculture

Agriculture remains the most vulnerable sector to climate change. According to experts, «70% of Africans derive their income from agriculture, which is itself 80% dependent on rainfall». In its last report in 2007, the Inter-Governmental Panel on Climate Change (IPCC) predicted a 50% decrease in output by 2020 in some countries. It was also reported that the increase in temperature will affect the availability of water, plant, animal and halieutic resources, which jeopardize food supply for local communities who derive most of their livelihood from agriculture. It was also noted during the work that climate change could accelerate the growth of certain plants, reduce the flowering cycles, drastically change regular season schedules, and extend the range of insect pests and pathogenic insects. To this, must be added the multiplication of extreme weather conditions, major destroyers of crops, notably floods and droughts. Hence, the urgency of taking concrete and viable measures to mitigate the impact of these changes on this sector which is vital for many countries, notably the Southern ones.

In addition, experts did not overlook the impact of agriculture on climate change too. Indeed, some forms of farming (including livestock) as practised since early 20th century, played an important part in the profound destruction of the environment. Today, agriculture contributes up to 9% of emissions of greenhouse gases (carbon dioxide, methane, nitrous oxide). It was also noted that 25% of CO₂ emissions are attributed to changes in land use, the use of nitrogenous fertilisers and synthetic pesticides. However, unlike other sectors, agriculture is but one source of greenhouse gas emissions.

To reduce the impact of farming on climate change, several solutions have been advocated. These include reducing tillage, better improvement of meadows and pasturelands, restoring degraded lands, and master the use of nitrogen fertilisers. These are techniques presented as a means for reducing carbon oxide, intended to contribute to the restoration and preservation of the environment for perennial and sustainable development.

A the end of the forum, several opportunities were identified and a solution was found as regards organic farming which uses less chemicals and more natural products and said to emit less nitrous oxide (N₂O). Furthermore, organic products are said to be much more resistant to extreme weather conditions such as drought and floods. It could provide better performance than conventional agriculture and allow ecosystems to better adapt to climate change. In short, adopting sustainable agricultural practices is synonym of increasing agricultural productivity while offering significant opportunities to reduce greenhouse gas emissions.

After three days of work, participants reached a consensus on the final declaration which calls for the promotion of sustainable production and consumption in developing sectors, particularly in agriculture. This forum also allowed the different African countries, members of the African Union (AU), to harmonise their views and play down their differences on strategies for adapting to climate change, before the 15th Conference of the United Nations Framework Convention on Climate Change scheduled from 7 to 18 December 2009 (in Copenhagen, Denmark), leading to a post-Kyoto climate regime in 2012. At this meeting, AU will be negotiating on behalf of the whole continent on climate issues.

That forum was an opportunity for participants from institutional and economic sectors, associations working for the promotion of sustainable development to discuss various topics. In addition to international cooperation for sustainable development, more specific issues concerning energy, health, mobility, preservation of natural resources and agriculture were also discussed.
Cross-perspectives

INTRODUCTION OF GMC IN AFRICA

Unlike South Africa, Burkina Faso promotes local expertise

South Africa and Burkina Faso are, for the time being, the two African countries to have accepted to engage in genetically modified cotton (GMC) growing. However, there are some noticeable differences in their respective patterns for the introduction of this variety of cotton.

Trusting local expertise in the introduction of new technologies in agriculture. This is the challenge Burkina Faso has just taken up. As a pioneering country, together with South Africa, to have adopted genetically modified cotton (GMC) in Sub-Saharan Africa, Burkina Faso took a different path to the adoption of this variety of cotton.

If in South Africa, the sector has been entirely entrusted to the Monsanto firm. In Burkina instead, the stakeholders themselves were responsible for the issue. Analyzing the two systems introducing GMC points out significant differences.

First, at the research level, South African authorities just offered Monsanto a few plots of land to carry out the experiments. That process served two purposes. The first was to ensure that the technology could adapt to the environment of the country.

The second was to disclaim responsibility for any emerging damaging risks on the environment and people. Or so did Chantal Arendse, the Director of Bio-Safety, an agency located in the Department of Agriculture, think. And this analysis is butressed by Mr. Jurie Steyn and
Mrs. Coleen Fourie, respectively Director of Makhathini Research Station and Director of Groblersdal Research Centre.

In Burkina Faso instead, it was not a matter of transferring technology as such, but to make sure that this technology tallies with the needs and requests expressed by grass-root producers. The authorities were primarily concerned with producers, not research institutions and/or politicians.

Also, producers have not been regarded as mere recipients of technology, but rather as partners in the research process, from conception, implementation to evaluation. This accounts for the fact that research has not been developed outside the environment of the users.

It was monitored by the State through the National Institute of Environmental and Agricultural Research (INERA). To achieve that, integration and enhancement of the participatory approach have been advocated, through the establishment of a mechanism of consultation and dialogue with the grassroot stakeholders, notably the producers. It should also be noted that «the conditions upstream and downstream were also met for the large-scale use of GMC through translation and dissemination of research results in all languages of the country», said Professor Alassane SERE, Director of Burkina Biotech.

In general, as far as research is concerned, South Africa has empowered Monsanto while in Burkina Faso, the national expertise coupled with the involvement of cotton stakeholders has been put forward and valued.

Then, if in South Africa, only Monsanto holds ownership of the seed, in Burkina Faso, by cons, the GMC issue is rather managed on a joint ownership basis by the world leading seed company and the State. «The seed belongs to Burkina Faso and Monsanto keeps the ownership of its technology (...)» says François Traoré, President of the National Union of Cotton Producers of Burkina (UNPCB). This specific and original approach of Burkina Faso justifies the dividend sharing between Monsanto, the National Union of Cotton Producers of Burkina, the State, researchers, sensitization and training actors. The added value of Bt cotton is thus shared between all the stakeholders involved in the production system.

Finally, concerning the distribution of Bt seeds, as in almost all countries where Monsanto manages to introduce its GM cotton, it is handled by Deltapine.

When this scheme does not work, Monsanto agrees with a local distributor to sell its wares. This is the case in India with Mahyco-Monsanto alliance. However, in Burkina Faso, none of these schemes is reproduced. The usual circuit for seed distribution has not changed with the arrival of the giant seed dealer. «We refused Deltapine managed the distribution; this function is devolved to UNPCB», stated Mr. Traoré. Thus, the arrival of Monsanto has not upset producers’ organizational pattern.

The GM cotton introduction system in Burkina Faso is a case study. Most reticence observed in Africa with this variety of seeds is underlain by the fact that some stakeholders fear for not only being excluded from the process, but also for risks that may result from it. Popularizing the model of Burkina Faso, may be a good capitalization and thus enable other cotton-growing countries of West and Central Africa eager to open up to Gm, to benefit from the experience of Burkina in this field.
Reducing pesticide use in agriculture is the challenge facing producers. To achieve that, organic farming is presented as the best alternative. However, several constraints related to its practice discouraged many African producers. To remedy this situation, Integrated Production, a concept still not well known, was recommended by the FAO to the so-called «developing countries». This is meant to allow them to grow restrictive crops using less and less pesticides.

The Integrated Production is defined as a high quality economic production giving priority to environmentally-friendly practices. It is safer, it because minimises undesirable effects and the use of agrochemicals, it helps protect the environmental and human health. Unlike organic farming, integrated production does not completely discard resorting to synthetic pesticides. Yet, they are used for instance when the methods of crop protection using natural enemies prove to be ineffective. Still, one should opt for a selective product that will not destroy beneficial insects.

This type of production has a positive impact not only economically but also socially and environmentally. Indeed, a virtual elimination of pesticides allows significant decrease in production costs, and increases, by the same token, disposable incomes for producers. This situation will inevitably lead to the improvement of the living conditions of populations, and to a better protection of biodiversity in rural areas as well. Aiming at producing economically and viably products of good quality, which are environment and health-friendly, Integrated Production combines ecological, toxicological and economic requirements.

Integrated Production is a technique very often used unconsciously by cotton producers in Africa. Its development involves several phases including several fine and repeated field observations, experiments, the establishment of a database of scientific facts revealed, the development of usable procedures and finally the development evaluation methods.

The latter allows farmers using Integrated Production to compare it with other farming types based on different types of indicators. Integrated Production minimises pesticide use. About two-thirds of agriculture in Switzerland is led by its precepts.

However, even if this production is used in fruit growing, studies are being conducted to see how it could be integrated in major crop such as wheat and cotton.
Mr. M. ALI COMPAORÉ, THE MANAGING DIRECTOR OF SOCOMA

«The adoption of Bt cotton is a credible alternative to the survival of our cotton industry»

Trained as a Rural Development Techniques Engineer, Mr. Ali COMPAORÉ, Manager of Cotton Production of SOCOMA, has several functions in the cotton sector of his country. In addition to being the President of the Association for Readjustment Funds (ADFL), he is the current Communication Officer of the Professional Association of Cotton Companies of Burkina (Aprocob). But, Mr. COMPAORÉ to kindly gave us this interview as a General Manager of Société Cotonnière du Gourma (SOCOMA), a position he has been held since November 2007. He talked about the situation of cotton production in SOCOMA zone and the introduction of Bt cotton in Burkina Faso as well.

DABA: Could you introduce SOCOMA, please?

Mr. Ali Compaoré: The Société Cotonnière du Gourma, commonly known as SOCOMA, is a private company with Burkina Béckou capital of thirteen billions eight hundred and fifty million (13,850,000,000) CFA francs. It was created in July 2004 following the liberalisation of the cotton sector in Burkina Faso and took over the assets of the SOFITEX in the Eastern part of the country. It is headquartered in Fada N’Gourma. Our franchise area covers not only the Eastern region of Burkina Faso, but also the East Central region including Koupléogo province which shares borders with the Republics of Niger, Togo and Benin, an area of approximately 56,000 square kilometers. Cotton production is very recent in this area. It really started in 1994 when the Head of State, through a grand tour, encouraged producers in the region to join cotton growing in order to improve their incomes and living conditions in the rural areas. Initially, cotton production was very low. It shifted from 2,200 tonnes during the 1994/1995 marketing campaign to 72,000 tonnes during the 2004/2005 campaign. We currently have three ginning factories with a capacity of 120,000 tonnes of seed-cotton a year.

How is the cotton sector organised in SOCOMA zone?

For the 2009/2010 campaign, there are 25500 farmers who are organised into 1,308 Cotton Producer Groups (Gpc) federated into 23 Departmental Unions (Udpc) and four Provincial Unions (UPPC). All unions are members of the Regional Union which is itself, a member of the National Union of Cotton Producers of Burkina Faso (UNPCB).

What are the strengths and weaknesses of cotton growing in the Eastern region of Burkina Faso?

One of our strengths is rainfall above all, which is favourable to growing cotton in the region. There is an average rainfall of 800 to 1,000 mm a year. Then, we have an asset of arable land suitable for agriculture. And finally, we have a population thanks to whose bravery we can achieve the goals we set ourselves. However, some weaknesses should be noted. Among them, we can mention the lack of training of farmers and the lack of agricultural equipment. It should be noted that about 45% of cotton growers are still using but the short-handed hoes. In addition to these factors, it should also pointed out the development of livestock which can be an asset on the one hand, and a disadvantage for cotton growing, on the other, since the coexistence between farmers and pastoralists is sometimes difficult.

As in other regions, Bt cotton is grown in SOCOMA area. Could you tell us the reason did why Burkina Faso get interested in this technology?

At the national level, the cotton sector had experienced an unprecedented crisis at the end of the 1996/1997 campaign after a large infestation by coprophagous caterpillars, mainly Helicoverpa armigera which affected the crop. This situation, according to experts, was due to resistance to pesticides (pyrethroids). In response, a sub-regional programme was implemented. Its goal was to improve the effectiveness of pesticides through the use of new molecules and the development of a new treatment programme of cotton fields, by establishing three windows to best manage the pests. In its quest for better solutions, Burkina Faso decided to focus on the genetically modified cotton (CGM) technology, notably Bt cotton which allowed some countries such as India to make progress as regards phytosanitary protection, while significantly increasing yields in its fields.

What was the process to the adoption of Bt cotton in Burkina?

It all started in 2003, when the Government allowed researchers to conduct studies in relation to this new technology. Thus, after several years experiments, the research led to satisfactory results. It concluded that Bt Cotton could provide an average yield of about 30% higher than conventional cotton. Moreover, studies showed that Bt cotton could reduce considerably the number of phytosanitary treatments, which decreased from six to two. It is time saving and allows producers to devote themselves to other farming activities. So, after those findings, Burkina engaged in Bt cotton production.

How can you explain the fact that some farmers did not get cotton seed during the last campaign?

No, I can tell you that there was no shortage of seeds. Bt cotton development programme consisted into growing 8,000 ha in 2008/2009 and 120,000 ha during the ongoing campaign. At the end of these seed multiplication stages, we will have enough Bt seed for all producers. Last year, the
seeds were given only to growers selected on the basis of their seriousness.

What solutions are you envisioning to remedy that seed shortage problem?

I can reassure you that from the 2010/2011 onwards, all producers who wish to cultivate Bt cotton will have the seed at their disposal. INERA through its cotton programme, cotton companies and seed producers are endowed with enough expertise to provide cotton growers with plenty of and high quality seeds. Contrary to what is generally believed, all Bt seeds will be produced in Burkina Faso, under the old seed production and distribution system in force within the sector.

What are the legal provisions in that respect?

At this level, Burkina has adopted a biosafety law which was passed by the National Assembly. Similarly, a National Biosecurity Agency (ANB) has been established with such bodies as the Scientific Committee, which is responsible for ensuring compliance with the provisions relating to the adoption of this technology. We believe that the legal and technical provisions are already in place to allow producers to adopt Bt cotton, which I shall repeat, is not necessarily a panacea but a credible alternative for the survival of our cotton industry.

What are the main obstacles to be challenged in order to perpetuate cotton farming in SOCOMA area?

One challenge is to increase productivity which still remains very low in this area. Even if the level of productivity has been tremendously improved, the outputs are below to the expectations. It still stagnates around one ton per hectare. We are striving for physical soil improvement through the dissemination of techniques such as direct seeding, planting on vegetal cover, and the use of organic manure as well. We are also working to raise the utilisation ratio of fertilizers. Another challenge, not the least important, is to mitigate the use of pesticides so as to enhance the biodiversity in this part of the country which abounds in many parks and natural reserves. We also believe that a good organisation of producers is equally important for sustainable cotton farming.

Regulating the introduction of Bt cotton in Burkina Faso. This is the mission assigned to the National Biosafety Agency of Burkina Faso (ANB). Headed by Professor Chantal Zoungrana, it remains an important lever for the mechanism of the introduction, popularisation and commercialisation of Bt cotton in this country.

The establishment of ANB results from the collective will of political actors and cotton producers to adopt genetically modified cotton (GMC). In addition to INERA, ANB has also been at the heart of debates on GMC in Burkina Faso. ANB is the Institution entitled to deliver all the permissions pertaining to biotechnology in the country. The Institution has two (02) Advisory bodies: a scientific committee comprised of 12 members and a National Observatory consisting of 33 members. Geneticists, entomologists, chemists, environmentalists and agronomists, among others, sit in the Scientific Committee. All scientific research results are subjected to debate. But more specifically, findings of studies related to environment and climate are subject to critical assessments so as to rule out any risk of error. As for the National Observatory extended to all sensibilities, it handles all the non-scientific and non-biosafety related issues.

Up to date, the biosafety law passed in 2006 is being reviewed and amended. The experimental phase is over. And the marketing stage has begun. According to the Director of the ANB, Professor Chantal Zoungrana, «this phase will be accompanied by adequate measures.

Burkina Faso has contracted a loan of 3.9 million USD from IDA to establish a national laboratory with a sub-regional scope. Its role will consist in providing WAEMU Member States with neutral and transparent support in assessing biosafety-related risks». She added that «research in the case of gene flow had revealed a distance of 15 meters as a refuge area between GMC fields and those of conventional cotton. But as a precaution, ANB has advocated a distance of 25 meters solely sown of cereal to avert any possible risk of contamination». Then, the Director of ANB warns: «In case of non-compliance with legislation on biosafety standards in Burkina Faso, the law provides for fines to be paid by violators ranging from five (5) million to five (5) billion FCFA. As for imprisonment penalties, they range from a period of five (5) to 15 years.» To sensitize citizens on these provisions, ANB will conduct an extensive awareness campaign to explain the foundations of the Biosafety Law, and to build the capacity of the National Union of Cotton Producers of Burkina (UNPCB) supervisors. The goal is to help them disseminate the information in the respective groups where they intervene.

The Agency does not stand for or against the GMC. Its mission consists in developing activities intended to ensure that national safety standards are met and taken into account in the endeavours aiming at introducing GMOs in Burkina Faso. The importance and sensitiveness of the role of ANB account for the need for it to go through several Ministries.

The current issue of the newsletter has been achieved with the support of: