



THE EUROPEAN UNION'S IPA 2007 PROGRAMME

Assisting Montenegro in approximating EU standards in statistics

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Contractor:	ICON Institute Public Sector GmbH Von-Groote str. 28, 50968 Köln, Germany
Project Manager:	Hristina Aleksandrova (+49 221 93743314) hristina.aleksandrova@icon-institute.de
Team leader:	Ljubinka Popovska Toševa (+382 20 624 322) lpopovska@icon-institute.de
Project Co-ordinator:	Gordana Radojević (+382 20 230 811) gradojevic@monstat.org
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1 ABBREVIATIONS

BC	Beneficiary Country
EC	European Commission
EUD	Delegation to the European Union to Montenegro
ESS	European Statistical System
EU	European Union
EUROSTAT	Statistical Office of European Union
FQR	First Quarterly Report
GDP	Gross Domestic Product
IMF	International Monetary Fund
IPA	Instrument for Pre-Accession Assistance
IT	Information Technology
IPR	Interim Progress Report
KE	Key expert
MetaDB	Meta Data Base
MONSTAT	Statistical Office of Republic of Montenegro
NA	National Accounts
NACE Rev. 1.1 (or Rev. 2)	National Classification of Activities, Revision 1.1 (or Revision 2)
SBR	Statistical Business Register
SBS	Structural Business Statistics
SC	Steering Committee
SNA	System of National Accounts
SSORM	State Statistical Office of Republic of Macedonia
StC	Statistical Council
STE	Short-term expert
STS	Short-term Statistics
TA	Technical Assistance
TL	Team leader
TSA	Touristic Satellite Accounts
WD, wd	Working days
WG	Working group

2 SUMMARY

2.1 Project synopsis

The overall objective of this project was to improve the range and quality of official statistics and to harmonise it with the acquis and international standards.

This project aimed to strengthen the quality, sustainability and efficiency of the national statistical system of Montenegro while ensuring that the production and dissemination of statistics that are reliable, timely, relevant and comparable.

It succeeded in upgrading the statistical systems in the BC, thereby improving the availability, quality, comparability and timeliness of statistical data in particular in the following main areas:

- Quality system for key processes in the production of statistics;
- Economic statistics;
- Business statistics.

Results

- Improved capacity of MONSTAT, and when relevant, other providers of official statistics, such as the Ministry of Finance and the Central Bank, have been encouraged to produce reliable, timely, relevant and comparable statistics according to the EU standards;
- Improved the functioning of the national statistical system, including revision of the legislative framework and strengthened coordination role of MONSTAT;
- Improved the system and sources for the production of national accounts according to the European system of national and regional accounts (ESA 95);
- Increased confidence in official statistics through a more coherent and transparent system of production of statistics and the dissemination thereof;
- Improved the quality and availability of business statistics.

Project Components

1. Developing a quality system for key processes in the production of statistics;
2. Further harmonisation of economic statistics and national accounts with EU and international standards;
3. Further improvement of business statistics, particularly the short term and tourism statistics, in accordance with EU and international standards.

Beneficiaries

- Statistical Office of Montenegro - MONSTAT

2.2 Executive summary

The aim of the Draft of the Final Report is to present the results of the project and demonstrate the further development of the National statistical system in accordance with EU standards, the European statistical code of practice and list of demands contained in Compendium.

Draft of Final Report, provides:

- Project Summary;
- Description of activities in components, results, indicators of achievement, recommendations and sustainability of activities;
- Resources used;
- List of documents produced.

During the progress of project Montenegro has, in November of 2010, become candidate country for EU membership, which has increased demands of all users and participants for standardised statistics according to the demands of *aquis communautaire*.

I. The contribution of the project in the field of statistical infrastructure

- Statistical law. The Project has, as part of the First Component on quality and metadata, finished a draft version of the new statistical law, which is improved and eliminated the weak points of previous Statistical Law from 2005, such as: strengthening the role of the MONSTAT in National Statistical System, strengthening the role of Director, more clarified role of the statistical council and revising the list of statistics producers. The law is expected to be adopted by Parliament in autumn 2011.
- Classifications. The new law of statistical classification NACE ver.2 was adopted in April 2011. The Project has also, within third component on business statistics, helped in transition of statistical classification NACE ver. 1.1 to NACE ver.2 with the specific instructions and examples. MONSTAT has started with the implementation of NACE rev.2 from January of 2011. In metadata prototype, which is developed within component 1, a module has been developed on classifications and data entering has commenced on the NACE rev 2 and is also cross referenced against the NACE rev 1.
- Statistical registers. Within the statistical business register work focussed on the improvement of information on the address system, the introduction of KAU, defining of group of companies and survey on quality of register. However, the problem of the address system is wider, and not completely within the authority of MONSTAT. In fact it is based on a bad address system, and reflects the inability to identify business units. The data collection system therefore has a serious effect on the scope of business statistics, on the overall quality of business statistics and affects use of results in the national accounts.
- Statistical metadata system. The project worked to establish a prototype metadata system and its computer implementation, as the beginning of the establishment and statistical data warehouse.

II. The contribution in the institutional aspects of MONSTAT

A great deal of project effort was put on capacity building into component 1, on quality of statistics and over a wide system of training, which included:

- Quality management - Development of self – evaluation system and assistance in planning and implementation of statistical processes.
- General statistical methodology and sample, SPSS – use by specific areas and increase of the efficiency of daily work, the improvement of knowledge in input part, control, imputation and prevention of data.
- Training on IT tools and web programming – improvement of knowledge on standardization of data base, data editing, control, website maintaining and the like.

III. The contribution of the project in the sector's statistics of MONSTAT

Progress has been made in areas of National Accounts, Structural Business Statistics and Short Term Statistics during two years of project implementation.

In the National Accounts, main results are:

- Experimental calculation of quarterly gross domestic product (GDP) for 2008, 2009 and 2010, according to the production method in current and constant prices;
- Improvement of calculation of import and export in constant prices for 2010, according to methodology “Handbook on price and volume measurement in national accounts”;
- Identification and tabular overview of non observed economy, in frame of calculated gross domestic product for 2008 (Eurostat tabular approach);
- IT application for support the calculation of QNA

In the Structural Business Statistics, main results are in the improvement, timeliness over improvement of production software, control of input data, estimation and imputation. In the current situation there is a need for more effort to accelerate data processing so that those results could be used in National Accounts (NA).

In the Short Term Business Statistics, main results are:

- *Industry statistics.* New system of production of Index of Industrial Production (methodology, questionnaire, weighting, deflation, IT program)
- *Construction statistics.* Survey sample was amended, Construction Index is designed using labour hours, as the basis for weighting;
- *Retail trade index* was amended and adjusted to the new weighting system
- *Improvement of data on turnover NACE Rev.1.1. in areas G,I,J,K,M,N and O* by a new survey “Quarterly survey on other services”;
- *Tourism statistics.* By the introduction of new module (survey) on tourism the household consumption of tourism in Montenegro is estimated, the Assessment Report of the status for start of calculation of TSA, initiating a new project on experimental calculation of TSA.

IV. Resources

- The project was developed as a logical continuation of previous projects, and statisticians concentrated on the creation of more tangible results with a practical application of knowledge gained during this project. The project drew regional, previous CARDS and SIDA projects but tried to avoid overlapping with other projects, which wasn't always possible to achieve.

- The project team has invested considerable effort to select tangible action, but this was subject to the limited capacity of MONSTAT, and aimed to be sustainable after the project ends.
- The project was implemented at the end with 24 activities, with 23 of the initial activities in the IR, were added 3 new activities, and 2 were cancelled.
- The project was implemented with the technical assistance of 4 key experts – team leader and 3 key experts of components, 14 experienced foreign short term experts (STE), and 7 local short term experts' through a total of 863 working days as well in the country as through remote technical support.
- In the project 2 surveys were conducted, 2 surveys were technically supported, there were 12 specially organized training sessions, 2 large workshops and 5 study visits. All activities were carried out with the strong orientation on capacity building, knowledge transfer and applying results in daily work
- During the project 99.3 % of the experts' working days and 98.0 % of the Incidental budget were utilised.

V. Risks and problems

The main risks and problems in the project were linked with human resources and the general recommendations of team are to improve this situation:

- lack of capacity in all departments, a high turnover of the staff;
- not enough coordination and communications among different departments;
- absence of knowledge for wide usage of benefits of IT and not enough IT-infrastructure (especially in the usage of database software, statistical software, advanced level of Excel, Word);
- not enough collaboration with other institutions, business community, universities;
- lack of working space;
- Low salaries.

Rezime projekta

Cilj Nacrt Finalnog izvještaja je da prikaže rezultate projekta "Dalji razvoj Nacionalnog statističkog sistema prema standardima EU", Evropskom statističkom kodu prakse i listi zahtjeva koji su sadržani u Kompendijumu.

Nacrt Finalnog izveštaja pruža:

Rezime projekta;

Opis aktivnosti u komponentama, rezultate, indikatore postignuća, preporuke i održivost aktivnosti;

Preled korišćenih resursa;

Listu produkovanih dokumenata.

Tokom odvijanja projekta, Crna Gora je u novembru 2010, postala zemlja kandidat za članstvo u EU, čime su se povećali i zahtjevi svih korisnika i učesnika za standardizovanu statistiku prema zahtjevima *aquis communautaire*.

I. Doprinos projekta u oblasti statističke infrastrukture

- Statistički zakon Projekat je u okviru prve komponente o kvalitetu i meta podacima, završio draft verziju novog statističkog zakona, koji je poboljšao i otklonio slabe tačke prethodnog Zakona statistike iz 2005 kao i: jačanje uloge Monstata u NSS, jačanje uloge

direktora, jasnija uloga statističkog savjeta i revidiranje liste proizvođača statistike. Zakon se očekuje sa da bude prihvaćen od strane Parlamenta tokom jeseni 2011.

- Klasifikacije Novi zakon statističke klasifikacije Nace rev.2 je donijet u aprilu 2011 godine. Projekat je u okviru treće komponente o biznis statistici, pomogao je u prelasku statističke klasifikacije Nace Rev 1.1 prema Nace Rev2 sa konkretnim uputstvima i primjerima. MONSTAT je počeo implementaciju NACE rev.2 od januara 2011 godine. U metadata prototipu koji je u okviru komponente 1, razvijen je moduo o klasifikacijama i početo je sa unošenjem podataka o NACE Rev 2 i vezi sa NACE Rev 1.
- Statistički registri U okviru statističkog poslovnog registra radilo se na poboljšanju informacija adresnog sistema, uvođenje KAU, definisanju grupe preduzeća i istraživanju o kvalitetu registra. Ipak, problem adresnog sistema je širi i nije u potpunosti u ingerencijama MONSTAT-a, ali loš adresni sistem, nemogućnost identifikacije biznis jedinica i prikupljanje podataka ima ozbiljne konsekvence na obuhvat biznis statistike, na opšti kvalitet biznis statistike i mogućnost korišćenja rezultata u nacionalnim računima.
- Statistički metadata sistem U okviru ove komponente se radilo na uspostavljanju prototipa metadata sistema i njegove informatičku implementacije, kao i početak uspostavljanja statističkog skladišta podataka.

II. Doprinos projekta u institucionalnim aspektima MONSTATa

Projekat je dosta radio na *jačanju kapaciteta* u okviru komponente 1 na kvalitet statistike i preko širokog sistema treninga koji je obuhvatio:

- Quality menagment- razvoj sistema samo-evaluacije i pomoć u planiranju i implementaciji statističkih procesa;
- Generalnu statističku metodologiju i uzorak, SPSS– primjena po konkretnim oblastima i povećanje efikasnosti dnevnog rada, poboljšanje znanja u dijelu unosa, kontrole, imputacije i prezentacije podataka;
- Obuke o IT alatkama i web programiranja- poboljšanje znanja o standardizaciji data base, data editing, kontrole, održavanje web stranice i sl.

III. Doprinos projekta u sektorskim statistikama MONSTAT-a

Napredak je postignut u oblastima nacionalnih računa, strukturalne biznis statistike i kratkoročne statistike, tokom dvije godine implementacije projekta.

U nacionalnim računima (NR) uradjeno je :

- Eksperimentalni obračun kvartalnog bruto domaćeg proizvoda (BDP) za 2008, 2009, i 2010 godinu prema proizvodnom metodu, u tekućim i stalnim cijenama;
- Unapredjenje obračuna uvoza i izvoza u stalnim cijenama za 2010 god. prema metodologiji „ Handbook on price and volume measurement in national accounts“;
- Identifikacija i tabelarni prikaz neobuhvaćene ekonomije u okviru obračunatog bruto domaćeg proizvoda za 2008 godinu. (Eurostat tabbular approuch).
- IT aplikacija za podršku proračuna Kvartalnih računa.

U strukturalnoj biznis statistici glavni rezultati su u poboljšanju pravovremenosti - preko poboljšanja produkcionog softvera, kontrole ulaznih podataka, estimacije i imputacije. U sadašnjoj situaciji treba još napora da bi se ubrzala obrada podataka i da bi se rezultati mogli koristiti u NR.

U kratkoročnoj poslovnoj statistici glavni rezultati su:

- *Industrijska statistika* Novi sistem produkcije Indeksa industrijske proizvodnje (metodologija, upitnik, ponderisanje, deflacija, IT program;
- *Statistika građevinarstva* Uzorak istraživanja je dopunjen, Indeks građevinarstva je konstruisan sa korišćenjem radnih sati kao osnove za ponderisanje;
- *Indeks trgovine na malo* (Retail trade index) je dopunjen i prilagođen novom ponderacionom sistemu;
- *Poboljšanje obuhvata podataka o "turnover" NACE rev.1.1 oblastima G, I,J,K,M,N i O* kroz novo istraživanje „Kvartalno istraživanja o drugim uslugama“.
- *Statistike turizma* Uvođenje novog modula (istraživanja) o turističkoj potrošnji domaćinstava u Crnoj Gori, izvještaj procjene stanja za početak proračuna TSR, iniciranje novog projekta o eksperimentalnom proračunu TSA.

IV. Resursi

- Projekat se odvijao kao logički nastavak prethodnih projekata, i pomogao je statističarima u kreiranju konkretnijih rezultata sa praktičnom primjenom stečenog znanja tokom ovog projekta, regionalnih, prethodnih CARDS i SIDA projekata, sa tendencijom da dođe do što je moguće manje preklapanja sa drugim projektima, što se nije moglo uvijek postići.
- Projektni tim je uložio dosta napora da izabere opipljive aktivnosti, koje su prilagodjene ograničenim kapacitetima MONSTAT-a, i da budu održivi nakon završetka projekta.
- Projekat je realizovan na kraju sa 25 aktivnosti, pri čemu od početnih 23 aktivnosti u toku IR, dodate su 3 nove aktivnosti, a 2 su poništene.
- Projekat je realizovan uz tehničku pomoć 4 ključna eksperta - tim lidera i 3 ključna eksperta komponenti; 14 iskusnih stranih kratkoročnih stručnjaka (SSTE), 7 lokalnih kratkoročnih stručnjaka, kroz ukupno 863 radnih dana kako u zemlji tako i putem udaljene tehničke podrške. U projektu su odrađena i 2 istraživanja, tehnički su podržana još 2 istraživanja, 12 posebno organizovanih obuka, 2 velike radionice i 5 studijskih posjeta. Sve aktivnosti su bile realizovane uz jaku orijentaciju na izgradnji kapaciteta i prenošenja znanja.
- Tokom projekta su iskorišćena 99.3 % od radnih dana eksperata i 98.0% od Incidentnog budžeta

V. Glavni rizici i problemi

Glavni rizici i problemi u projektu su bili povezani sa ljudskim resursima i opšta preporuka tima je da se poboljša ova situacija:

- nedostatak kapaciteta u svim odeljenjima, često napuštanje MONSTAT-a;
- nedovoljna koordinacija i komunikacija između različitih odeljenja;
- odsustvo znanja za široku primjenu pogodnosti IT-a i ne dovoljna IT infrastruktura (posebno u korišćenju baze podataka softvera, statistički softver, napredniji nivo programa Excel, Word);
- ne dovoljna saradnja sa drugim institucijama, poslovnom zajednicom, univerzitetima;
- nedostatak radnog prostora;
- male plate.

3 THE PROJECT COMPONENTS

3.1 Component 1: Developing a quality system for key processes in the production of statistics

3.1.1 Component objectives

Following the Inception Report (IR) the objectives of this component were:

- To improve capacity of MONSTAT and to produce reliable, timely, relevant and comparable statistics according to the EU standards;
- To improve functioning of the national statistical system, including revision of the legislative framework and strengthened coordination role of MONSTAT;
- To increase confidence in official statistics through a more coherent and transparent system of production of statistics and the dissemination thereof.

Following the IR, to achieve the objectives, 11 Activities were planned to be carried out during the project and 10 were implemented. The Activity 1.5.2 “Support to the establishment of cooperation arrangements between the statistical office and the other key data providers” was cancelled This was due to the fact that MONSTAT was already in the process of establishing the arrangements by itself and did not see reason to involve the project. The following 10 activities were carried out:

1. **Activity 1.1.1** - Assessment of the state of play, MONSTAT legislative role in the Statistical System and existing and needed management and control systems;
2. **Activity 1.1.2** - Development of primary and secondary legislation with regard to strengthening the role of MONSTAT as a central management body for the statistical system of Montenegro;
3. **Activity 1.2** - Assessment of the state of play, identification of existing procedures, practices and systems in MONSTAT with a view of metadata systems;
4. **Activity 1.3** - Assisting in the definition of policies and guidelines for the work of MONSTAT and the other statistics providers (statistical coordination, standardisation and harmonisation);
5. **Activity 1.4** - Development of IT tools for facilitating networking and statistical coordination among the key statistics producers and MONSTAT;
6. **Activity 1.5.1** - Support to the implementation of policies and guidelines;
7. **Activity 1.6.1** - Improving the understanding of the key data providers on the role of MONSTAT in data collection and management;
8. **Activity 1.6.2** - Raising awareness of the role of MONSTAT;
9. **Activity 1.7.1** - Training on the concepts of quality management and quality of statistics for MONSTAT staff and for the key data providers;
10. **Activity 1.7.2** - Study visit to an EU member state.

In terms of Key Expert working days, Activities 1.3, 1.4 and 1.5.1 were the main Activities of Component 1, used to develop a metadata documentation system and to support implementation in MONSTAT. Short-term International Expert resources were dedicated to Activities 1.1.1, 1.1.2 and 1.7.1, for legislative issues and training on quality of statistics. Study visit was realized with Statistics Portugal. An overview of all Activities is provided in the section 1.1.2 below.

3.1.2 Overview of activities implemented and achieved results

Activity 1.1.1 - Assessment of the state of play, MONSTAT legislative role in the Statistical System and existing and needed management and control systems

There were two Activities focused on the legislative role of MONSTAT. This first Activity was an assessment and review activity of the current legislative framework with a view to improving functioning of the national statistical system and strengthening the coordination role of MONSTAT. The assessment was carried out in view of EU requirements for a modern statistical legislation and integration into the European Statistical System (ESS). An assessment mission was carried out by a STE Stanislav Drápal, from 1st to 4th February 2010. His Mission and Assessment reports are found in Annexes 1.15 and 1.50 respectively.

At the time of the mission, a draft of new Law on the Statistical System of Montenegro was being prepared and the focus of the Activity was on consultation of this draft and how to take into account ESS Code of Practice requirements in the new law. The following were found to be the critical issues in the draft law:

- Role and function of MONSTAT among producers of statistics;
- Structure of the Statistical System (participants);
- Statistical Council – role and functions;
- Dissemination – equal access to data;
- International relations.

In the Assessment Report it was also recommended that MONSTAT develop and support a training system for employees of MONSTAT and other producers of statistics, as well as start preparations for and implementation of a quality management model in the organization.

Activity 1.1.2 - Development of primary and secondary legislation with regard to strengthening the role of MONSTAT as a central management body for the statistical system of Montenegro

This was the second, out of two, Activities focused on the legislative role of MONSTAT, and was carried out by STE Stanislav Drápal from 19 to 23 July 2010 (Annexes 1.16 and 1.51).

The original draft of the new law was modified and improved after the first mission of the STE. The final draft now included all basic principles of the European Statistics Code of Practice. Almost all other recommendations by the STE had also been included.

In this Activity the STE reviewed all chapters, articles and paragraphs again, and had consultations with MONSTAT management. Important contributions to the final draft were also provided by the Global Assessment (AGA) of the National Statistical System of Montenegro in March 2010. During the mission a consultation on the final draft was arranged, with the members of the Statistical Council, to discuss all latest proposed improvements.

The STE had a small reservation concerning the new law as regards absence of any internal (MONSTAT) and inter-institutional working group during the preparation process of the legislation. The draft is largely a result of lawyers without broader participation of statisticians. Slight consultation and coordination with other governmental institutions and official statistics producers could lead to disharmony between statistical legislation and legislation of other institutions (e.g. the Central Bank of Montenegro) concerning official statistics.

At the time of writing this report the draft new Law on the Statistical System of Montenegro was at final stages of the national legislative system and was expected to be approved in the coming weeks.

Activity 1.2 - Assessment of the state of play, identification of existing procedures, practices and systems in MONSTAT with a view of metadata systems

The main objective of KE's first mission (3 - 13 November 2009) was to prepare an Assessment Report of the state of play and to identify existing procedures, practices and systems with a view of metadata systems development. Results of the Activity can be found in the Mission and Assessment Reports prepared (Annex 1.1 and 1.30 respectively).

Activity 1.3 - Assisting in the definition of policies and guidelines for the work of MONSTAT and the other statistics providers (statistical coordination, standardisation and harmonisation)

The focus of this activity was on systemization of reference metadata produced by MONSTAT by developing metadata standards and templates, and by promoting best practices and standard methods in the context of development of a Metadata base for MONSTAT. This Activity directly supported achieving compliance with the European Statistics Code of Practice, as adoption of the CoP in the ESS has resulted in much greater emphasis being placed on transparent and harmonized reporting on metadata and data quality. One of the strategic objectives of the Development Strategy of Statistics in Montenegro for the period 2009 - 2012 was also achieving compliance with the principles of the CoP.

Activity 1.3 was one of the main activities in Component 1 (together with Activities 1.4 and 1.5.1), and considerable amount of mission time was spent on the development of the MetaDB and application, and on subsequent implementation in MONSTAT. Activity 1.3 was implemented in 11 missions by the KE:

No	Period	Annexes
1	03 – 13 Nov 2009	1.1
2	01 – 09 Dec 2009	1.2 & 1.31 & 1.33
3	01 – 10 Feb 2010	1.3 & 1.34 & 1.35
4	01 – 10 March 2010	1.4 & 1.36 & 1.49
5	22 – 31 March 2010	1.5 & 1.37 & 1.38
6	22 June – 08 July 2010	1.6 & 1.39 & 1.40
7	15 – 26 Aug 2010	1.7
8	01 – 11 Nov 2010	1.8 & 1.43
9	22 Nov – 02 Dec 2010	1.9 & 1.45
10	13 – 17 Dec 2010	1.10 & 1.44 & 1.46
11	15 – 25 Feb 2011	1.12 & 1.47

➤ Metadata base (or a repository)

While details of the Metadata application are presented under Activity 1.4, below a summary is provided on the objectives and use of a metadata repository:

- reduction of workload as metadata are captured and documented only once, preferably throughout the production process, and redundant metadata collection and maintenance are avoided (a unique repository);

- re-use of metadata for multiple purposes, e.g. micro data descriptions, metadata on the Internet along with the data they describe, quality reports and reports required by international organizations, or data file archiving;
- standardization of metadata documentation and avoidance of inconsistencies caused by multiple sources;
- Support of statistical coordination and facilitation of conceptual standardization and harmonization.

MONSTAT currently does not have a unit, department or other entity responsible for metadata coordination or quality issues. Metadata base development work was done with MONSTAT IT Department and statistical subject-matter staff was introduced to the system by way of presentations, workshops and training sessions that were organized in the course of the Project. Details are presented under Activity 1.5.1. Recommendations concerning future work on metadata and quality are given in a separate section below.

➤ Euro SDMX Metadata Structure, ESMS

To be in line with international standardization and harmonization efforts, the Project recommended adoption of **Euro SDMX Metadata Structure** (ESMS), a Eurostat reference metadata standard as the new survey and data collection documentation template for MONSTAT. The suggestion was followed up by MONSTAT, and the ESMS became the basis of one of the modules of the Metadata base prototype (See Activity 1.4 for details). The ESMS is fully compliant with **Statistical Data and Metadata exchange, SMDX¹** Content-oriented Guidelines, and is aligned with the CoP and its coverage of institutional environment, statistical processes and statistical outputs. The ESS quality criteria (relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability and coherence) including cost and burden are covered by ESMS metadata concepts.

The Project prepared seven surveys, and data collection descriptions according to the ESMS. The documentation was prepared on the basis of all metadata available for the Project in English, as well as additional translation of material by the Project Local Coordinator. The documentation, also uploaded in the MetaDB, was:

- Labour force survey (Annex 1.38);
- Structural business statistics (Annex 1.39);
- Retail trade survey (Annex 1.39);
- Agricultural Census (Annex 1.43);
- Population Census (Annex 1.45);
- Consumer Price Index (CPI) (Annex 1.47);
- Poverty statistics (Annex 1.46)

➤ Classification of statistical subject-matter domains

A central organizing element of the Metadata base is a classification of statistical subject-matter domains. All metadata are classified according to the same schema, apart from classifications and code lists. The list of statistical subject-matter domains applied in the MetaDB is based on the first

¹ <http://sdmx.org/>

three sections of the UNECE² Classification of International Statistical Activities, DISA - <http://unece.unog.ch/disa/>. The organization responsible for maintaining the list of subject-matter domains is the Bureau of the Conference of European Statisticians, but the list is also published by the SDMX consortium³, and is part of the SDMX Content-oriented Guidelines.

➤ Classification module

In the Classification module of the Metadata base international terminology recommendations and naming conventions were implemented: **UN Glossary of Classification Terms** (Prepared by the Expert Group on International Economic and Social Classifications http://unstats.un.org/unsd/class/family/glossary_short.asp).

Activity 1.4 - Development of IT tools for facilitating networking and statistical coordination among the key statistics producers and MONSTAT

The project developed a Metadata base prototype that contains the following modules:

- Survey and Data collection descriptions (e.g. methodological descriptions);
- Statistical concepts and definitions;
- Classifications and code lists;
- Questionnaires;
- Quality reports (not implemented);
- Variable Registry (structure implemented but no contents).

The Metadata base has the following main functionalities and features:

- Developed on SQL Server platform, with Visual Basic 6.0 in application development;
- Multi-lingual concept, with Montenegrin and English contents and interface. Keyboard language, labels and contents of the interface are switched and loaded dynamically according to the working language chosen by the user;
- A desktop multi-user application with interface for metadata entry/edit/update, and metadata navigate/browse. User access rights management (database administrator(s), statisticians) ensures that metadata are protected from unauthorized access;
- The system accommodates time (historical) versions of metadata;
- Relevant additional methodological material can be uploaded into the system in Acrobat/PDF, Word or Excel format to be viewed in the application;
- The system accommodates multiple links between various modules. If classifications and concepts and definitions exist, stored in respective modules of the MetaDB, relevant to a survey/data collection description in question, they can be identified and selected from a dropdown list/checkbox and links added.

The Project produced the following documentation on the Metadata base system:

- MetaDB User requirement specifications 1, Surveys and data collections (Annex 1.31)
- MetaDB User requirement specifications 2, Glossary –module (Annex 1.34)
- MetaDB User requirement specifications 3, Classifications –module (Annex 1.36)
- MetaDB User requirement specifications 4, Variable Registry –module (Annex 1.44)
- MONSTAT ESMS template Concepts 1-10 (Annex 1.33)

² United Nations Economic Commission for Europe

³ <http://www.sdmx.org/>

- MONSTAT ESMS template Concepts 11-21 (Annex 1.35)
- MONSTAT ESMS template – Montenegrin translation (Annex 1.49); by Drago Loncarevic, Project Assistant
- MetaDB screen images – MetaDB + application overview (Annexes 1.41, 1.42 & 1.48)

The specifications listed above also include content - oriented guidelines for users. The guidelines are included in the Metadata base itself and the user can consult them while working in the database + application.

➤ Module for Surveys and Data collections

- The module was developed following the Euro SDMX Metadata Structure. This is the core module of the MetaDB where statisticians describe and document statistical methodology, data collection and processing, data dissemination and data quality, as well as variables, classifications, concepts and definitions related to their respective surveys and data collections. The ESMS consists of 21 metadata concepts, with a limited breakdown of sub-concepts.

➤ Module for statistical concepts and definitions

- The glossary covers definitions of key concepts, variables and terminology underlying the statistical data; definitions of statistical units, populations, elements, indicators and indices. It is a central repository which can be referred to throughout the data production process from survey design and data collection to dissemination, e.g. publication of data tables on the web linked to the corresponding statistical concept definitions.
- By the end of the project 185 statistical concepts and definitions in English were uploaded into the Glossary – module from the following domains: Abbreviations (15), Census of Agriculture (10), Crop production (7), Livestock statistics (5), Fishing (3), Forestry (18), Environment (12), Structural business statistics (15), Tourism (3), Construction statistics (7), Retail trade (3), Consumer Price Index (1), Household budget survey (7), Labour force survey (10), Population statistics (25), Health statistics (18), Education statistics (8), Poverty statistics (8), Justice and crime (6), National Accounts (4).

➤ Module for classifications

- Accommodates information on: national and international classifications in use at MONSTAT and/or important reference classifications, current and previous versions, e.g. NACE Rev. 1.1 and NACE Rev.2; descriptions and explanatory notes of the classes; correspondence tables - relationship between different classifications or between current and previous versions of the same classification (displayed in Excel format in the application); and general information on the background and development of classifications (e.g. purpose of the classification, custodian and legal base).
- A central resource that functions as: a browser; an instrument for statistical harmonization and coordination in MONSTAT; a tool for the management of classifications; and a user interface/application for upload, edit and update of classifications, code lists, descriptions of the classes, and explanatory notes of the classes.
- NACE Rev. 1.1 and NACE Rev. 2 English original versions, on a 4-digit level, were uploaded into the DB by the Project. Correspondence tables between NACE Rev. 1.1 and NACE Rev. 2 were also uploaded into the system.

➤ Module for quality reports

- This module was not implemented by the Project as systematic quality reporting is only starting at MONSTAT. Training on quality frameworks, quality reporting and Code of Practice was organized within Activity 1.7.1. However, adoption of the ESMS by MONSTAT was also a practical introduction to ESS quality reporting requirements for statisticians as the ESMS is aligned with the CoP and covers the ESS quality criteria. Preparation of survey and data collection descriptions according to the ESMS produces building blocks for a basic user-oriented quality report which can then be extended with producer-oriented quality information (i.e. aimed at internal assessment of process and output quality).

➤ Module for questionnaires

- Questionnaires in Word, Excel or PDF format can be uploaded into the system to be viewed in the application.

➤ Module for Variable Registry

- Creation of a Variable Registry was not planned initially to be implemented in this Project, but an additional module was created in the MetaDB for the purpose. Collection of statistical variables did not start, but a template was defined for recording variables. Variable related terminology and attributes implemented were based on practices established by Eurostat.

Activity 1.4 was implemented in 12 missions by the KE and MONSTAT IT Department:

No	Period	Annexes
1	01 – 09 Dec 2009	1.2 & 1.31 & 1.33
2	01 – 10 Feb 2010	1.3 & 1.34 & 1.35
3	01 – 10 March 2010	1.4 & 1.36 & 1.49
4	22 – 31 March 2010	1.5
5	22 June – 08 July 2010	1.6
6	15 – 26 Aug 2010	1.7 & 1.41
7	01 – 11 Nov 2010	1.8 & 1.42
8	22 Nov – 02 Dec 2010	1.9 & 1.44
9	13 – 17 Dec 2010	1.10
10	15 – 25 Feb 2011	1.12
11	14 – 23 March 2011	1.13
12	23 – 27 May 2011	1.14 & 1.48

Activity 1.5.1 - Support to the implementation of policies and guidelines

A running theme throughout the Project was the emphasis placed on the importance of making metadata widely available to users. In all discussions, training and presentations it was consistently brought up how metadata contribute to the quality of statistics especially in terms of accessibility and clarity; high-quality data are accompanied with necessary metadata for the correct interpretation of statistical data. Ensuring accessibility and clarity of the data and metadata disseminated, MONSTAT will also set an example within the Statistical System of Montenegro, and

improvements in dissemination will have a positive effect on the profile and visibility of MONSTAT.

MONSTAT currently does not have a unit, department or other entity responsible for metadata coordination or quality issues. Metadata base development work was done with MONSTAT IT Department, and in the course of the Project several presentations, workshops and training sessions were organized for MONSTAT staff on metadata and the Metadata base prototype. The following table presents an overview on the workshops, training and the number of staff participating:

No	Date	Type	No of participants	Subject-matter domains or MONSTAT Departments	Annexes
1	29 March 2010	Presentation / WS	21	- MONSTAT management - IT Department - Labour Force Survey	1.5, 1.37, 1.40
2	2 July 2010	Presentation / WS	12	- Business Statistics	1.6, 1.37, 1.40
3	9 Nov 2010	Presentation / WS	10	- Agriculture	1.8, 1.37, 1.40
4	26 Nov 2010	Presentation / WS	10	- Population statistics - Household Budget Survey - National Accounts	1.9, 1.37, 1.40
5	23 Feb 2011	Presentation / WS	9	- National Accounts and other economic statistics	1.12, 1.37, 1.40
6	21 and 22 March 2011	MetaDB training	7	- National Accounts - Tourism - Construction	1.13
7	26 and 27 May 2011	MetaDB training	7	- Economic statistics - Population Statistics - Agriculture	1.14
8	17 June 2011	MetaDB training	9	- Business statistics	1.75

Before training sessions the application was installed in the computers of participating statisticians and the training was organized at their working spaces. Metadata from MONSTAT statistical subject-matter domains were consolidated by the KE (details presented under Activities 1.3 and 1.4) and uploaded into the MetaDB before training sessions and workshops in order to demonstrate the new system with actual metadata from various statistics. Availability of reference and quality metadata in English slowed down the pace with which the MetaDB was being populated by the Project. Review of various statistical subject-matter domains suggests that additional documentation work will be needed in most domains also in Montenegrin in order to produce rich metadata following the guidelines provided by the Euro SDMX Metadata Structure.

Activity 1.5.1 was implemented in 9 missions by the KE:

No	Period	Annexes
1	03 – 13 Nov 2009	1.1
2	22 – 31 March 2010	1.5 & 1.37 & 1.38
3	22 June – 08 July 2010	1.6 & 1.39 & 1.40
4	01 – 11 November 2010	1.8 & 1.43
5	22 Nov – 02 Dec 2010	1.9 & 1.45

6	13 – 17 Dec 2010	1.10 & 1.46
7	15 – 25 Feb 2011	1.12 & 1.47
8	14 – 23 March 2011	1.13
9	23 – 27 May 2011	1.14

Activity 1.5.2 – CANCELLED - Support to the establishment of cooperation arrangements between the statistical office and the other key data providers other key data providers

This activity was cancelled due to the fact that MONSTAT was already in the process of establishing the arrangements by itself and did not see reason to involve the Project. The working days were re - distributed among the other Activities.

Activity 1.6.1 - Improving the understanding of the key data providers on the role of MONSTAT in data collection and management

In this Activity one action was taken towards the end of the Project (Annexes 1.14, 1.73 and 1.74). A presentation was organized for the Statistical Council of Montenegro of work done in Component 1. A demonstration of the use and contents of the Metadata base by MONSTAT IT staff was part of the presentation. The Statistical Council was presented an overview of the main objectives of Component 1, that is, revision of the legislative framework for the national statistical system, and development of metadata guidelines and systems as a prerequisite for development of quality monitoring systems and compliance with European Statistics Code of Practice (CoP).

In the course of the Project, the Statistical Council was also consulted within Activity 1.1.2 concerning the final draft of the Law on Statistical System of Montenegro.

The Project recognizes that more frequent contacts with other data providers would have been beneficial for strengthening the coordination role of MONSTAT, but during the Project were not initiate actions in this respect either. To reinforce its position as a coordinator and methodological leader among other statistics producers, MONSTAT should take an active role in the fields of metadata and quality, also by making metadata widely available to users. This will set an example and contribute to the process of defining the scope of national official statistics, as well as raise awareness of statistical data in general.

Activity 1.6.2 - Raising awareness of the role of MONSTAT

New MONSTAT public website went live in September 2010, www.monstat.org. The Internet is an increasingly important dissemination medium for statistics and statistical methodology and other metadata. Therefore, the focus of this Activity was on providing suggestions and recommendations regarding contents of the MONSTAT website in order to raise the profile and visibility of the statistical office specifically in terms of MONSTAT's web presence. A report with suggestions and recommendations was prepared and is found in Annex 1.52.

Currently the MONSTAT website is under-developed in terms of data and metadata availability. Data are mostly available in inflexible PDF format, there is no dissemination database and only a few pre-defined data tables are available. Very few metadata are available and not in a structured form. Share of information published in English should be increased in order to serve international users.

This Activity was supported by training organized within Activity 1.7.1 for IT Department in web tools and technologies in order for them to develop and maintain the MONSTAT website in the future. Currently, MONSTAT's website is hosted by an external server.

Discussions with various MONSTAT staff took place during several missions about current development plans for the website, specifically concerning metadata dissemination through the web. All staff working with dissemination issues was given early on access to the Metadata base prototype in order for them to make use of any and all contents available in the MetaDB in the course of the Project.

Activities mentioned above were carried out by the Key Expert over the course of 5 missions:

No	Period	Annexes
1	03 – 13 Nov 2009	1.1
2	01 – 10 March 2010	1.4
3	15 – 26 August 2010	1.7
4	22 Nov – 02 Dec 2010	1.9
5	14 – 23 March 2011	1.13 & 1.52

Work in this Activity was complicated by the following:

- MONSTAT is in the process of reorganization, and establishment of a planned Department on Dissemination and Communication has been delayed. Consequently, roles and responsibilities regarding dissemination were not clear during the Project period.
- MONSTAT currently cooperates with a private company concerning public relations and cooperation with the media, as well as monthly data dissemination, which affects improvement of relations with main users of statistical information, including the media.

For the reasons mentioned, support for increasing cooperation with the media by the Project, as well as possibility of coordination of data dissemination between MONSTAT and the other key data providers (possibly adoption of a common dissemination tool, such as e.g. PC-Axis) were considered to be unrealistic in timing at this point.

Activity 1.7.1 - Training on the concepts of quality management and quality of statistics for MONSTAT staff and for the key data providers

The following table presents an overview of all training and consultation organized in this Activity:

No	Training course / consultation	Period	Name and position of Expert	Annexes	No of participants
1	Training for CAF	20 – 23 July 2010	STE Blagica Novkovska	1.21, 1.59, 1.60, 1.61, 1.62, 1.63, 1.64, 1.65	14
2	Statistical methods training course	29 Nov - 03 Dec 2010	STE Kari Djerf	1.17, 1.55, 1.56, 1.57	18
3	Statistical consultation on sampling issues	14 – 18 Feb 2011	STE Kari Djerf	1.18	2

4	Quality reporting and Code of Practice	30 May – 02 June 2011	STE Metka Zaletel	1.22, 1.66, 1.67, 1.68, 1.69, 1.70, 1.71, 1.72	9
5	Excel advanced training course for NA	24 February - 7 April 2010	JSTE Predrag Stanisic and Srdjan Kadic	1.19	20
6	Training for SPSS	27 August-10 September 2010	JSTE Milica Vukotic and Ivana Stesevic	1.20	22=2groups X 11 stat.
7	Training for statistical methodology	17 May - 15 June 2011	JSTE Milica Vukotic and Ivana Stesevic	1.23	18=2groups X 9 stat.
8	Training for sampling	23 June – 19 July 2011	JSTE Milica Vukotic and Ivana Stesevic	1.24	10
9	IT training course	17 January-20 July 2011	JSTE Predrag Stanisic and Srdjan Kadic Igor Ivanovic Savo Tomovic	1.25	10 in the first half, 5 in the second half of the course

KE contribution to this activity consisted of the following:

- Presentation on the European Statistics Code of Practice to MONSTAT management (7th Dec 2009, Annex 1.58); main principles, experiences from other statistical organizations and implications for MONSTAT.
- Preparation of DRAFT ToRs for training course on statistical methods (Annex 1.53), and involvement in practical preparations for the course that was arranged between 29 Nov and 3 Dec 2010.
- Preparation of DRAFT ToRs for training on the concepts of quality management and quality of statistics; sub-activity - Quality reporting and Code of Practice (Annex 1.54). The course was arranged between 30 May and 2 June 2011.

Activities listed above were carried out by the Key Expert over the course of 5 missions:

No	Period	Annexes
1	01 – 09 Dec 2009	1.2 & 1.58
2	15 – 26 Aug 2010	1.7 & 1.53
3	01 – 11 Nov 2010	1.8
4	22 Nov – 02 Dec 2010	1.9
5	13 – 17 Dec 2010	1.10 & 1.54

Activity 1.7.2 - Study visit to a EU member state

The visit was undertaken with Statistics Portugal in Lisbon in January 27-28th 2011. Six MONSTAT staff participated in the Study Visit. The purpose of the visit was to:

- Improve understanding of metadata system development and management in a statistical institute, and metadata related cooperation within the European Statistical System.
- Learn from the experiences of a statistical institute of an EU Member State as regards implementation of the Code of Practice and quality reporting.

The study visit was short in days but with an intensive program with plenty of issues covered. In terms of data components or modules, the MONSTAT Metadata base follows the same main principles as the system of Statistics Portugal, although the magnitude of metadata contents and functionalities of the system are of course much reduced in the MONSTAT system. However, for future metadata work at MONSTAT, several important principles and interesting practical implementations by Statistics Portugal were observed during the visit. A report on the Study Visit is included as Annex 1.11. Preparations by the KE for the Study Visit and the visit itself took place during the following 3 missions:

No	Period	Annexes
1	01 – 11 Nov 2010	1.8
2	22 Nov – 02 Dec 2010	1.9
3	27 – 28 Jan 2011	1.11 – Mission Report from Study Visit

3.1.3 Recommendations for future work

Organization of work on metadata and quality

- MONSTAT needs to establish a **unit, department or other entity responsible for coordination of metadata and quality work**. E.g. a working group with representatives from all Departments can be a solution to start with. Full support of the management for such a group would be vital in order to reach lasting results.
- In the planned MONSTAT organizational framework a Sector has been designated to Statistical Coordination and ICT with 2 departments: Department for ICT, and **Department for National Coordination, Classifications, Metadata and Sampling**. Thus the organizational framework already accommodates coordination of classifications and other statistical metadata, but a mandate and guidelines need to be clarified to truly support a horizontal approach to metadata management, standardization and harmonization.
- Statistical units have the statistical subject-matter expertise and thus, are responsible for the correctness of their metadata. A coordination unit works towards improved information exchange between various organizational departments, and brings together statistical subject-matter experts with experts on classifications, data dissemination, quality and IT. To capture inconsistencies, redundancy and conceptual problems, coordination is necessary to ensure coherency, harmonization and general quality control.

Metadata and quality

- Metadata availability in various subject-matter domains reviewed during the Project suggests that **additional documentation work** will be needed in most domains in order to produce rich metadata following the guidelines provided by the ESMS. Especially data

processing methodology and data quality aspects are currently not covered sufficiently in most statistics. **Systematic work on metadata and quality issues** is relatively new in MONSTAT, and this presents a challenge in a sense that statisticians may initially fail to see the benefits of the ‘extra’ documentation work that is required. This is where the role of the proposed Metadata Working Group (above) becomes critical.

- MONSTAT statisticians need **further training on quality issues** to become more familiar with quality concepts, quality reporting, quality indicators and the role and practical implications of the Code of Practice. MONSTAT needs to establish a framework for quality reporting also beyond the legal requirements from ESS, and to that end calculation of basic quality indicators to monitor the level of quality of surveys would be a very good first step.
- **Further enhancements of the Metadata base:**
 - * Flexible extraction and export facilities to stimulate use of the metadata for various purposes (e.g. quality reporting, Internet, internal reporting, publications). Metadata download format options and report layout design(s) required should be developed in co-operation with dissemination and web services staff.
 - * In addition to manual metadata entry, a user-friendly import function for “bulk“ uploading of metadata should be made available to users as metadata are often created outside metadata repositories. Commonly used standard formats for uploading, as well as downloading metadata are Excel and a well structured text format ASCII. XML is an important option to keep in mind for future.
 - * History and version handling mechanism. Definitions, structures of classifications and statistical methodologies change over time and it is important to keep track of those changes. Only significant changes should be denoted as new versions though, and only one version will be current and active at any given time.
 - * Translation revision control: the user must be able to notify the system that a translation(s) must be revised.
 - * The system should have text components that allow users to add/describe mathematical equations.
 - * Classifications – module should be developed into a repository from where other applications download classifications and code lists into production and dissemination environments: import/export functions to support data exchange between the Classification modules and e.g. Word documents, Excel, relational databases or XML files.
- Development of a **Variable Registry**. MONSTAT should start bringing together information on statistical variables scattered across various documents and production systems. A module has been included in the MetaDB for the purpose. To start with, the information can be stored in non-harmonized form, providing an inventory of all variables used in MONSTAT data production. The aim is to improve accessibility and clarity of the information, as well as to encourage harmonization and re-use of the variables across subject-matter domains. Registration of all variables in a centralized storage will make it easier to detect and prevent inconsistencies such as parallel production of the same variables, possibly named in different ways in various organizational units, or having more or less differing definitions depending on the statistics. Another situation causing confusion is when different variables are defined essentially in the same way. The Registry will make these differences visible and can be used as a tool in determining when the differences or similarities are methodologically justified and when there is a need for harmonization and standardization of variable names and definitions.

Data dissemination

A report with suggestions and recommendations concerning web dissemination was prepared in Activity 1.6.2. (Annex 1.52). Below a summary of the main points:

- To reinforce MONSTAT position as a coordinator and methodological leader among other statistics producers, MONSTAT should take an active role in the fields of metadata and quality, and make **metadata and quality information widely available to users**. A professional agency in charge of producing official statistics has the responsibility to inform users of the methodology used in data collection and processing, as well as of the quality of the data produced.
- **Metadata should be available for each survey/data collection**, for which data are disseminated, in standardized format. **Interlink ages between disseminated data and metadata** are recommended: from the data, users will be guided to relevant metadata, such as variable and other terminology definitions, classifications and questionnaires, and other documentation on the survey/data collection where the data originate from.
- A section on **classifications** already exists on the MONSTAT website, but it would benefit from harmonized presentation structure of the material, as well as from some additional information on classifications. If possible, classifications and code lists should be available in machine-readable files rather than PDF versions.
- Development of a user-friendly **dissemination database** would allow MONSTAT users to select data for downloading.
- A standard set of **basic data tables** should be made available for each area of statistics providing a comprehensive picture of the respective areas. These pre-defined tables should be downloadable into standard international formats (spreadsheet tables, etc.) for further processing.
- MONSTAT includes some statistics produced by other producers of **official statistics in Montenegro** in its yearbook and monthly review. To provide users with a single access point or a **portal** on the web, to a full range of official statistics, MONSTAT could provide on its website descriptions of each data collection produced by other producers, and hyperlinks to respective data on the other producers' websites.
- As an EU candidate country Montenegro and the Montenegrin Statistical System have close connections with the **ESS and Eurostat**. In light of this, **links to Eurostat** data, metadata and quality information should be present on the MONSTAT website.
- **Clarity of statistical data tables** should be paid attention to, e.g. definitions of labels, explanations of standard symbols used in tables, footnotes highlighting specific precautions, labels for table rows and columns, use of standard coding and classification systems.
- Regular **monitoring of timeliness and punctuality of data dissemination** should be implemented.
- Regular **monitoring of the use of the MONSTAT website** should be implemented, e.g. number of visits, page views, and the number of PDF, data and table downloads. MONSTAT has recently implemented a User Satisfaction Survey on the website which will provide valuable feedback in meeting the needs of various users.
- The amount of **English material** available on the MONSTAT website should be increased in order to serve international users.

Establishing close collaboration with different institutions as:

- Government institutions for better usage of administrative data and evidences for statistical purposes, promoting statistical standards and reducing the resources for data collection;
- Universities as regular educational and research support.

Training needs and sharing know-how

A regular in-house programme has to be established. for:

- New staff to appreciate the concepts of the official statistical system in Montenegro and ESS and basic statistical methodology;
- Improving the usage of IT (Advanced Word, Advanced Excel, Access, making queries, statistical software);
- Regular presentations of new projects and results;
- Establishing the system of INTRANET for better sharing and flow of internal information.

3.1.4 Indicators of Achievement

New Law on Statistics adopted

- At the time of writing this report the draft new Law on the Statistical System of Montenegro was at final stages of the national legislative system and was expected to be approved in the coming weeks.

Number of agreements signed with data providers

- Relevant ACTIVITY CANCELLED.

Number of statistical activities documented

- **7 statistical activities** – Labour force survey, Structural business statistics, Retail trade survey, and Agricultural Census, Population Census, Consumer Price Index and Poverty statistics.
- **185 statistical concepts and definitions** - Abbreviations (15), Census of Agriculture (10), Crop production (7), Livestock statistics (5), Fishing (3), Forestry (18), Environment (12), SBS (15), Tourism (3), Construction statistics (7), Retail trade (3), CPI (1), Household budget survey (7), LFS (10), Population statistics (25), Health statistics (18), Education statistics (8), Poverty statistics (8), Justice and crime (6), and National Accounts (4).
- **NACE Rev. 1.1 and NACE Rev. 2** English original versions, on a 4-digit level, were uploaded into the DB by the Project, as well as correspondence tables between NACE Rev. 1.1 and NACE Rev. 2.

Level of completeness of the documentation on statistical activities

- The ESMS consists of 21 metadata concepts, with a limited breakdown of sub-concepts. Approximately half of all ESMS concepts were completed for each statistical activity documented according to the standard. However, not all the metadata concepts are relevant for each statistical activity. In general, availability of reference and quality metadata in English slowed down the pace with which the MetaDB was being populated by the Project. Additional documentation work will be needed in most domains also in Montenegrin in order to produce rich metadata following the guidelines provided by the ESMS.

Number of quality reports produced

- Not implemented – Systematic quality reporting is only starting at MONSTAT. Training on quality frameworks, quality reporting and Code of Practice was organized within Activity 1.7.1. However, preparation of survey and data collection descriptions according to the ESMS produces building blocks for a basic user-oriented quality report, as ESMS is aligned with the CoP and covers the ESS quality criteria.

Policy documents on metadata in place

- Implemented - see Activity 1.2 & 1.3 & 1.4 and 1.5.1 for details.

Written manuals, guidelines and work plans for implementation

- Implemented - see Activity 1.3 & 1.4 & 1.5.1 for details.

The number of people trained through consultations, meetings, seminars and study visit

- Total of **123 MONSTAT staff** took part in various Component 1 presentations, trainings, workshops and a study visit during the Project. In addition to this, **15 representatives from the Statistical Council** took part in a presentation of Component 1 results on 14 June 2011.

3.2 Component 2: Further harmonisation of economic statistics and national accounts with EU and international standards

3.2.1 Component objectives

Overview: the following table presents a simple analytical framework for National Accounts (NA) to show what the project has achieved, and what remains to be done after the project.

NA task	Before project	Action	During project	Recommended activities after the project
<i>Annual estimates in current values</i>	Available, and improved with IMF support during the first project year	2.2	Assessed; some recommendations for improvements given	Project recommendations need to be followed up
<i>Annual estimates in constant values</i>	Available	2.3	Assessed; recommendations for improvements given	Project recommendations need to be followed up
<i>Exhaustiveness</i>	Some adjustments incorporated	2.4	Systematic framework introduced; experimental results for 2008 prepared	Framework of the project needs to be applied to 2009, 2010
<i>Quarterly estimates in current and constant values</i>	Not available	2.1	First experimental results for 2008 - 2010 prepared	Project work needs to be continued, by following up the recommendations of the project
<i>Sector Accounts</i>	Not available	-	Not part of the project	Needs to be introduced
<i>Supply – Use Tables (SUT)</i>	Not available	-	Not part of the project, but an introduction was given during a workshop	Work on SUT needs to start

Component specific objectives are:

- Further improvement of economic statistics;
- Further improvement of system of annual national account;
- Setting the bases for calculation the quarterly national accounts.

The project has tried to achieve these objectives by undertaking the following seven actions:

1. **Action A.2.1**: Support the introduction of quarterly estimates of GDP in current and constant prices;
2. **Action A.2.2**: Improving annual GDP in current prices;
3. **Action A.2.3**: Improving annual GDP in constant prices;
4. **Action A.2.4**: Improving exhaustiveness of GDP;
5. **Action A.2.5**: Working group for national accounts;
6. **Action A.2.6**: Improving the survey on agricultural production prices in order to meet National Accounts needs.
7. **Action A.2.7**: Study visit to a EU member state

In the project six actions were implemented with activity **Action A.2.5: Working group for national accounts** being cancelled. MONSTAT has not initiated any action in this respect, due to very limited resources.

Action 2.1 was the main activity, and has used about half of the available resources. Due to the launching of the one year IMF project “Improving the quality of the national accounts statistics in Montenegro” at the beginning of August 2009, most of the activities foreseen for action 2 were done by the IMF project, and the main contribution of the project to this activity has been the evaluation of the work done with the IMF assistance. Actions 2.3 and 2.4 were the other main contributions of the project. Action 2.5 has not been carried out. As was noted in the IR this is an activity for MONSTAT and not for the project and the project would only provide support to MONSTAT. However, no such action was undertaken by MONSTAT. Action 2.6 was not in the original IR, but was later added by MONSTAT, as part of “complementary services” (which also provided some more resources for actions 1 and 4). Action 2.7 is defined after Third Interim Report

3.2.2 Overview of activities implemented and achieved results

Action 2.1: Support the introduction of quarterly estimates of GDP in current and constant prices

MONSTAT does not yet compile quarterly estimates for GDP, so the project had to start from scratch. The project introduced a two-fold approach: indirect estimation and direct estimation. The indirect approach makes use of short-term volume indicators (mainly monthly) to allow for the extrapolation of previous years’ estimates to provide quarterly estimates in prices of the previous year, which can then be inflated to current values using available price indexes. The direct method makes use of administrative and survey data, taking them at face value. These will have to be deflated to yield constant values estimates. The project started with making an inventory of available data sources that can be used, either following the direct or the indirect approach. Using available data sources the project has set up a prototype system of quarterly GDP compilation, by output and by expenditure method in current and constant values, resulting in experimental estimates for 2008 – 2010.

To fit better with the actual work undertaken, the list of activities for this action included in the IR was modified during the project. The following “rationalized” list has been used for mission 3 – 8:

- (L1) Data collection;
- (L2) Development of EXCEL application;
- (L3) Testing of application on collected data;
- (L4) Documentation, Training, Recommendations.

Annex 2.1 presents the way the original list of activities in the IR corresponds to this new list (also including the additional conditions stipulated by the EC for the assignment of 20 additional WDs to component 2 for this action).

The QA action 2.1 was implemented in 10 missions by the key expert Gosse Hommes:

Nr.	Period	L1	L2	L3	L4	Remarks	Annex
1	26 – 30 October 2009	x					2.7
2	25 – 29 January 2010	x					2.8
3	March 2010		X			Home work	2.9
4	July 2011		X			Home work	2.10
5	6 – 10 September 2010			x	x		2.11
6	4 – 8 October 2010			x	x		2.12
7	22 – 26 November 2010			x	x		2.13

8	17 – 21 January 2011			x	x		2.14
9	31 January – 4 February 2011			x	x		2.15
10	9 – 13 May 2011				x	Workshop	2.16, 2.34, 2.35

➤ (L1) Data collection

The project made an inventory of all available short-term indicators produced by MONSTAT that could, potentially, be used for the indirect method, a total of about 270 time-series. These were loaded into the QA system developed by the project.

Annual data for 2007 – 2009 for GDP by output and expenditure method in current and constant prices were obtained from the NA Department. These were also loaded into the system.

For the expenditure method direct quarterly estimates were prepared for 2008 – 2010, along the lines followed for annual estimates. These were loaded into the system as well.

The project has undertaken some new quarterly surveys for some activities (NACE G, Q, excluding H, for all quarters of 2010, and Q1 2011). These survey activities have been shifted to the business statistics component. Results can, and should be used to supplement the above data in the future. However, this has not yet been done for the current experimental estimates for 2008 – 2010, due to the fact the new data became available too late in the project to be of use.

MONSTAT also launched a new quarterly survey in 2010 that could provide data for direct estimation for some activities for the output approach. Also here, data were not yet available during the project to be incorporated. This remains to be done in future work.

➤ (L2) Development of EXCEL application

The project developed an EXCEL QA application that contains the following functionality:

- Database for annual and quarterly (direct) data in normalized form;
- Database for quarterly indicators (with functionality to automatically link to the sources);
- Specific design for the QA system in a so called “template”, with supporting classification (this allows for flexibility, MONSTAT can implement any design it desires);
- Data and results are presented in “cross-sectional” and time-series views;
- Estimation procedure for quarterly estimation can be specified;
- Selected procedures can be applied to obtain quarterly estimates;
- Implicit price, volume and value indexes are automatically generated;
- Result tables can be exported;
- Time-series can be graphed;
- Balancing can be automated, both within one period and over time.

The project produced the following documentation on the developed system:

- User manual (annex 2.2);
- List of instructions to apply the system (annex 2.3);
- Systems overview (annex 2.4).

The system has been developed in VBA-Excel. However, to use the system no programming is required. The system is completely flexible, and the adaptation of the system to new requirements also does not require any VBA programming.

➤ (L3) Testing of application on collected data

Much mission time was spent on the application of the developed QA system. This involved:

- Loading collected data into the system;
- Experimenting with various estimation methods (using different indicators);
- Estimating quarterly values by output and expenditure method in current and constant values for 2008 – 2011 Q1 (using 2007 as start-up year);
- Studying the implicit indexes and the graphs that the system produces;
- Selecting the best indicators / methods;
- Coming to final experimental estimates.

The final experimental estimates can be found in annex 2.5, where indicators and methods are described and graphs and tables can be found.

Although estimates for both the output and expenditure methods have been prepared, these are not yet balanced. The project did not have time to undertake this part of the work. Expenditure data were only finalized near the end of the project. Also, the methods for some activities on the output side are clearly less than optimal and also need improvements before any balancing can be undertaken.

Considerable discussions with MONSTAT with regards to the start-up of a quarterly compilation cycle took place during the missions. The project recommended the following phases:

1. Experimental estimates 2008 – 2010 for the output side in current and constant prices;
2. Regular quarterly output side estimates published according to fixed time table, with a revision of current and previous year estimates once annual data become available (e.g. revise 2010 and 2011 when annual data on 2010 become available in the last quarter of 2011);
3. Experimental balancing of expenditure side estimates to output side estimates in current and constant prices (with fine tuning of methods on the output side);
4. Publication of the full system with both output and expenditure side estimates, with a new base year, e.g. 2010 (instead of the current 2007 base year).

The project undertook only the first phase. MONSTAT can take the project results and initiate phase 2. Alternatively, it can skip phase 2 and implement phase 3 (e.g. under the new national IPA project) which should result in phase 4.

➤ (L4) Documentation, Training, Recommendations

Documentation has been provided in the 10 mission reports and in the annexes mentioned earlier (annex 2.2 – 2.5).

The following training was provided:

- EXCEL advanced training (under component 1);

- VBA programming introductory training for NA (this training was aborted at the request of the NA Department);
- Training in the QA system (during missions 5 – 9);
- Training in conceptual issues related to NA (missions 5, 6, 10);
- Workshop on QA (part of mission 10).

Recommendations will be given in a separate section below.

Action 2.2: Annual GDP in current prices

The aim of action 2 was to support the improvement of the system of National Accounts in current prices, focusing on the incorporation of new or improved data sources, on new or improved estimation methods and on more detailed breakdowns. As was already remarked earlier, this part of the NA support work has effectively been taken over by the IMF project. This IMF work resulted in the following activities mentioned in the IR for the second action to become superfluous:

- (A1) Support the introduction of two-digit NACE detail;
- (A2) Support the preparation of new data series 2007 – 2009 incorporating improvements made since the beginning of the project.

Hence the project only carried out the two other activities mentioned in the IR:

- (A3) Update part 1 (on annual current value compilation) of the IPA 2007 Regional Assessment after the IMF project has finished;
- (A4) Provide on-the-job training on issues related to ESA 95 methodology and European practices to produce annual national accounts.

One mission (18 – 22 October 2010; Annex 2.17) was carried out by the non-key expert Bastiaan de Vet to undertake activity A1. The assessment report prepared can be found in annex 2.6. The other activity (A4) was shifted to activity 3 (annual GDP in constant prices).

Action 2.3: Annual GDP in constant prices

The aim of action 3 was to evaluate annual constant prices estimates and suggest improvements for better price and volume measures. This was done in the light of the European Handbook on Price and Volume measures. The IR mentions the following four activities:

- (CP1) Inventory of sources and methods of annual constant price estimates;
- (CP2) Evaluation of annual sources and methods of constant price estimates based on the European Handbook;
- (CP3) Develop a long-term plan for the elimination of all C methods;
- (CP4) To carry out a workshop on Price and Volume measures.

These activities were carried out by the non-key expert Bastiaan de Vet in four missions:

Nr.	Period	Annex
1	29 November – 3 December 2010	2.18
2	10 – 14 January 2011	2.19

3	7 – 11 March 2011	2.20
4	9 – 13 May 2011	2.21, 2.28, 2.29

The aim of the first two missions was to make an inventory of sources and methods for annual constant price estimates for the output and expenditure methods in the light of the European Handbook. Results can be found in the reports for these missions, and in annex 2.6. This fulfilled activities CP1 and CP2.

The third mission was more practically orientated, with a focus on improving the expenditure and output approach to constant price compilation. Work was done on imports and exports and constant price compilation of output and intermediate consumption. Documentation can be found in the report for the third mission. This report also included concrete suggestions for improvements that should result in the elimination of (some) C methods, the goal of activity CP3.

The last mission was dedicated to training, and included a two-day workshop on constant price estimation (the workshop also included Supply Use tables, a NA tool that is very useful for constant price estimation). This completed activity CP4.

Action 2.4: Exhaustiveness

Action 4 was meant to support the introduction of procedures to make the annual estimates exhaustive. This was based on the Eurostat tabular approach. The IR had identified the following activities:

- (E1) Identify major areas of non-observance;
- (E2) Make suggestions for appropriate estimation methods;
- (E3) Make suggestions for improvement of data sources, and explore the possibility of special surveys;
- (E4) To carry out a workshop on exhaustiveness.

These activities were carried out by two non-key experts from Macedonia, Verka Panova and Violeta Cadikovska, over the course of four missions:

Nr.	Period	Annex
1	1 – 4 March 2010	2.22
2	21 – 25 June 2010	2.23
3	30 August – 3 September 2010	2.24
4	9 – 13 May 2011	2.25, 2.30, 2.31, 2.32, 2.33

Activity E1 dedicated to fact-finding was carried out during the first mission. Results can be found in the mission report.

The main work (E2 and E3) was done during the second and third missions. This involved three parts:

- Implementation of the European tabular approach for the output method by NACE sections of activities based on employment data for 2008;
- Introduction of the tabular approach for the expenditure method for 2008;
- Preparing of the trade margin matrix for 2008.

The Tabular approach organizes all non-exhaustiveness possibilities into 7 different categories (N1 – N7). The project investigated the categories:

- N3, Not required registering;
- N5, Registered entrepreneurs not surveyed;
- N6, Producers deliberately misreporting.

For the output method a number of adjustments categorized under N3, N5 and N6 were proposed, partly based on employment data from different data sources (according to the labour-input method). Experimental calculations for 2008 indicated an adjustment of up to 14% of GDP (6% in non-financial corporations and 8% in households). The most important sectors were Trade (4.1%), Hotels and Restaurants (3.6%) and Construction (2.4%).

For the expenditure method categories N3 and N6 were investigated for Household final Consumption (HFC) and Gross Fixed Capital Formation (GFCF). Experimental calculations indicated an adjustment of around 8 % (3% for HFC and 5% for GFCF).

The work on the Trade margin table was in support of the above tabular approach, to enable the commodity flow method, incorporating both resources and uses.

The last mission was dedicated to training, with a 1-day workshop session organized on exhaustiveness. This fulfilled activity E4.

Action 2.5 - Working group for national accounts

The project had proposed that a half-day presentation be organised on the importance of basic data for NA, targeted at higher management from other organizations (to be repeated if needed). However, as remarked earlier, MONSTAT has not initiated any action in this respect, due to very limited resources. The 3 WDs assigned to this action were shifted to the QA action 1.

Action 2.6: Improving the survey on agricultural production prices in order to meet National Accounts needs

This action – added by MONSTAT after the IR had been finalized – consisted of 2 missions by the non-key expert Peter Pauli, and was undertaken near the end of the project. This action was a very modest contribution to the system of APS and EAA and could be considered as the beginning of systematic work in this area. There is still an enormous amount of basic data to be processed: parts of 2009 and all of 2010 followed by the construction of all related formulas for aggregating and other applications. This will take weeks rather than days and will be a part of separate component in new IPA 2010 statistical project.

The first mission was carried out from 12 - 16 May 2011 (Annex 2.26) and was dedicated to upgrading the agricultural industry in the National Accounts (NA) estimates. It focussed mainly on absolute agricultural prices, price indices (emerging from these prices) and the determination of sales in the system of Economic Accounts of Agriculture (EAA). Also, attention was given to the weighting scheme used for price index calculations.

The second mission from 4 - 8 July 2011; Annex 2.27 embarked on training/explaining the principles of the EAA system and included also NA staff since estimations of Agriculture in the NA will probably remain for another 2 years under the responsibility of the NA department.

Action 2.7: Study visit to a EU member state

This action, added by MONSTAT after the third reporting period had been finalized, was conducted in National Statistical Institute of Romania in period 20-22 June 2011 with four statisticians from Monstat.

The main purpose of the visit was to get more information about:

1. The introduction of processes to produce quarterly national accounts in Statistical Office of Romania including organizational aspect.
2. General steps in accession to EU – preparation and negotiation with EC relating to fulfilling EU regulation relating to the quarterly national accounts. Special attention was put on tables containing quarterly national accounts data (minimal set of data) which Statistical Offices have to send to Eurostat in order to fulfil all condition for EU membership.
3. Different methods for calculation, data sources;
4. Non-observed economy.

The reports from Monstat and INSSE are in Annexes 2.36 and 2.37.

3.2.3 Recommendations for future work

General remark: One of the main problems identified by the experts is the lack of capacity of the national accounts department, with a high turnover of the staff, a lack of suitable, coordinated sources and the absence of a suitable IT-infrastructure (especially the use of database software, like Access) for the compilation of the national accounts. The first recommendation – subscribed to by all experts for component 2 – is to improve this situation.

Action 2.1: Support the introduction of quarterly estimates of GDP in current and constant prices

- In case MONSTAT want to publish the prepared quarterly estimates: check the current experimental estimates for 2008 – 2010 thoroughly; publish the output side estimates only;
- Improve estimates for NACE L, M, N on the output side by introducing direct data from the government budget;
- Introduce the annual ownership of dwelling calculation in the estimate for NACE K;
- Investigate improvements for NACE A, J, K (business services) on the output side;
- Investigate the use of direct survey data (business statistics surveys for services, as developed under the business statistics component of IPA 2007; new quarterly survey by NA) for 2010 onwards;
- Improve quarterly constant price estimates for exports / imports by using disaggregated unit value indexes;
- Carry out experimental balancing between output and expenditure methods for 2008 – 2010; the balances include changes in inventories and the statistical discrepancy;
- Introduce more NACE detail on the output side;
- Use seasonal adjustment software to compile seasonally adjusted time-series;
- Change the start-up year from 2007 to 2010;
- Introduce an official publication / revision calendar;

Actions 2.2 and 2.3: Annual GDP in current / constant prices

- Start collecting data on investment and inventories;
- Introduce commodity flows to underpin consistent estimates for household final consumption expenditures and for gross capital formation if based on supply and use tables;
- Introduction a goods and services classification based on CPA in sufficient detail for purposes of national accounts compilation in current and constant prices;
- Improve corrections for quality change regarding prices and unit values for deflating all expenditure categories;
- Imports and exports department should provide detailed (meta) data for deflating imports and exports, fine-tuned at the detailed national accounts goods and services classification;
- Deflation of imports of services should be done in greater detail and with the use of appropriate prices;
- An improved investment survey in sufficient detail should get a high priority;
- An investment price survey should get a high priority as well;
- A survey to collect data on changes in inventories should have a high priority. SBS can serve this purpose. That is why SBS should be improved as well. It concerns coverage of units (comprehensiveness), timeliness, and data to be collected;
- The knowledge of staff regarding the supply and use tables in current and constant prices and price index number theory should be improved. The main reason is to establish a framework for structured development of the system of statistics and to provide a fair basis for understanding the relations and identities in the economy;
- Make better use of SBS, PRODCOM and PPI data so that deflation methods may be introduced;
- Introduce the (A60) industrial classification for the constant price estimates;
- Corrections for quality change should be made explicitly.

Action 2.4: Exhaustiveness

- Prepare exhaustiveness adjustment by output method as developed during the project for 2009, 2010;
- Prepare exhaustiveness adjustment by expenditure method as developed during the project for 2009, 2010;
- Incorporate the adjustments into the official GDP figures during the next revision.

Action 2.5 - Working group for national accounts

- Set up a working group on national accounts to raise awareness among suppliers of basic data to NA about the importance of good quality basic data, delivered to NA in a timely manner.

Action 2.6: Improving the survey on agricultural production prices in order to meet National Accounts needs

- In a next phase the project should not concentrate only on Output process, but also on Input process which are not identical to the Output calculation procedures. Also the project should look at basic data which are not collected by the department.
- Publication of any price data in the coming 1-2 years, let alone price indices, without establishment better bases of data, is not recommended.

- The current publication on Purchases and Sales should be cancelled since it contains highly unreliable and even misinformation. In addition, it is a Eurostat firm request not to bother them with data that is meaningless and likely to be changed rapidly and frequently.
- The upcoming IPA2010 project contains a component on EAA and it is wise to see if work on Prices and EAA can start as early as possible despite the heavy workload the agricultural department is currently facing or can soon expect: Publications on the Agricultural census, Standard Output, Farm register, Pilot surveys, upgrading, EAA/APS and other regular tasks

3.2.4 Indicators for achievement

- National department trained for calculating quarterly national accounts (Training materials delivered and list of participants provided);
- Workshop materials provided (agenda, list of participants, workshop papers, presentations);
- Existing documentation at MONSTAT studied, reviewed, assessed, improved;
- Recommendations for improvements of existing data sources made.

3.3 Component 3: Further improved business statistics in accordance with EU and international standards

3.3.1 Component objectives

- Further improvement of statistical infrastructure (statistical business register (SBR), and NACE classification);
- Further improvement of short term statistics;
- Further improvement of structural business statistics and support the development of quarterly national account;
- Further improvement of tourism statistics and establishment the frame for touristic satellite account.

The project has tried to achieve these objectives by undertaking the following seven actions:

1. **Action A3.1** – An assessment of the Montenegro Business Statistics System
2. **Action A3.2** - Statistical Business Register – Improvement, and
3. **Action A3.3** - Statistical Register - Training
4. **Action A3.4** – A Study Visit to an EU Member State
5. **Action A3.5** - Improving the availability of business statistics, especially the Structural Business Statistics (SBS) and Short Term Statistics (STS)
6. **Action A3.6** - Create a set of quarterly surveys to meet the requirements of the Quarterly National Accounts
7. **Action A3.7**- Harmonising the tourism survey on arrivals and overnight stays at accommodation establishments with EU standards
8. **Action A3.8** Study visit in Croatia.

Substantial progress has been made towards every objective. In particular the activities set out below demonstrate the amount of activity undertaken in each area. The SBR has been enhanced. Short term statistics have seen some significant developments, the highlights of which are a completely new IT and statistical system for producing the Industrial Production Index and a new survey together with a new data processing and analysis system for measuring the output of the Services sector. New surveys have been established. The Structural Business Statistics system has also been improved and training has been provided on a number of fronts including the SBR, SPSS, IT systems and data editing. Successful Study Visits have been held in Croatia and the UK.

The only area where development has been limited has been in the development of tourism statistics. While some new surveys have been set up, a review has been undertaken of the data needs for a Tourism Satellite Account and a workshop has taken place with all the key players interested in monitoring tourism in Montenegro, there were insufficient resources within the MONSTAT to fully develop a TSA. However, terms of reference were drawn up for a new contract on the TSA was implemented according new separate project.

3.3.2 Overview of activities implemented and achieved results

Activity 3.1 – An assessment of the Montenegro Business Statistics System

➤ A1 Review the Short Term Statistics surveys – definition, data collection, weighting and compliance with EU Regulation.

The short term statistical surveys review found that:

- The Statistical Business Register which underpins the STS data needed improvement. In particular the accuracy of addresses needed to be improved and the NACE Rev 2 coding needed to be implemented. In many cases response rates in surveys, which go to smaller enterprises, showed higher non-response rates in those areas. New questions needed to be added to some forms to pick up variables required by the STS. For example, the Manufacturing sector required a domestic/non-domestic split.
- Some new surveys (or extensions of NACE Section coverage) were required in some areas. For example, there were no short term data on the wholesale sector or the motor vehicle repair sector and the coverage in NACE categories J-Q needs to be improved, for example in real estate, where there are no short term data (see tables 1 and 2 in the appendix).
- Some indices needed to be corrected (Index of Production) or created (Construction Cost Index. In the case of the IoP the weights were completely out of date and reflected the industrial profile of Serbia-Montenegro.
- In some cases (e.g. the Monthly Wages and Salaries Survey) samples needed to be addressed by methodology so that they cover the whole economy and not just large enterprises

A review of the Short term Surveys was completed with the assistance of SSTE Mike Pepper and is at Mission report 1 in Annex 3.1, and 3.34. Also in the mission report is recommendations for future development STS and Action plan.

➤ A2 Review the Structural Business Statistics (SBS) surveys – definition, data collection, weighting and compliance with EU Regulation.

A review of the SBS survey was conducted and reported by John Kinder in Annex 3.3.

The review identified a number of necessary improvements including:

- Improvement to the production software/software to allow comparisons at aggregated levels which involved changes being made to checking and editing such as: a response rate analysis by variable is required, additional range, credibility and compatibility checks need to be added to the software to speed up error discovery. Software is amended to allow comparison of key variables over time. Software needed to be amended to identify the most significant issues for the largest firms first. A list of significant errors needed to be produced routinely. This would provide a target for the SBS team to aim at to deliver within a timescale.
- Improvement and automation of the Imputation procedures, including: - automatic comparison with other survey data sources on trade, construction, industry to allow imputations to be automatically proposed, automatic comparison with the Statistical Business Register for enterprise and employee details industry to allow imputations to be automatically proposed, automatic comparison with the Annual Financial Reports submitted to the Commercial Court. Furthermore, the delivery of this data set needs to be speeded up so that large enterprises can have turnover figures and other figures confirmed quickly ,

automatic comparison with Wages and Salaries data industry to allow imputations to be automatically proposed

- Preliminary results to be published with the publication software, in particular, needing to be improved. Publication is delayed by a lack of accessibility to analytical software. Several improvements could be made to speed up publication including software should be available to better analyse the data, software should allow Survey Teams to create tables with headings and an appropriate structure. Consideration should be given to allow access to the SBS data via another software product (e.g. SPSS)
- Better documentation was needed, especially once new data checking and, error checking and imputation systems are made available.

➤ **A3 Prepare report on review identifying recommendations for surveys changes.**

A short review of the Short term Surveys was completed by KE in Annex 3.4 (see also A1).

Activity 3.2 Statistical Business Register – Improvement, and Activity 3.3 Statistical Register - Training

Work on improving the Statistical Business Register was undertaken by Andrew Allen (a Short Term Expert during his three missions:

No	Period	Annexes
1	25 – 29 Jan 2010	3.24
2	22 – 27 Aug 2010	3.25
3	23 – 27 May 2011	3.26

➤ **SB1 Identify processes to improve the accuracy of the address information.**

An initial report on the processes needed to improve the accuracy was set out in the Mission Report of Andrew Allen in Annex 3.24 and also 3.26. This report suggested the following:

- i) A questionnaire and clear plan for the business register survey be put in place. This will make the quickest and biggest improvement to the register. The sample will cover all large businesses and a proportion of medium sized businesses.
- ii) A proposal was made on how to improve address information, by making a more formal use of the regional offices;
- iii) A plan was produced on how to identify enterprise groups on the business register.

Following on from this report Andrew Allen undertook a further two missions where improvements were made to the register. The business register survey was reviewed, and proposals made for an expansion of the survey in future years. A review of the requirements for enterprise group data was also conducted. The Business Register Survey results were able to meet the short – term needs for enterprise groups.

➤ **SB2 Research simple ways of recoding NACE1.2 coding to NACE 2 for each enterprise AND**

➤ **SB3 Implement NACE 2 coding structure on the SBR**

A plan on how to code to NACE rev 2 was prepared and implemented. This was based on both the Business Register Survey (BRS) and correspondence tables supplied from UK and Croatia. The SBR successfully transferred to NACE Rev2 Codes in January 2011. Outline guidance on how to do the automatic coding, once data are available has also been supplied, was provided

➤ **SB4** Identify and implement a mechanism for identifying enterprise groups and Kind of Activity Units (KAUs)

Discussions took place about the need to record KAU's. A strategy for populating the register with KAU's was discussed. Only limited work has been followed up on the definition of KAUs as this was thought to be less important than activities SB1-3

➤ **SB5** Create a summary report of the SBR

A template for an SBR report was available. The key expert provided an example of an SBR report from the UK and from another Balkan country (Kosovo). The summary report proposal is now being implemented and a basic report of the SBR statistics is being made available within the project.

➤ **SB6** Identify metadata requirements (with component 1)

This is joint action with Component 1, and was defined the metadata for two business surveys Retail trade and SBS – see Annex A1.39.

➤ **SB7** Training for other staff in MONSTAT to understand the SBR and its use and importance.

Training Course on the Statistical Business Register was set up, designed and run by STE Tim Clode. The course was repeated twice, in English and Montenegrin language in January and April 2010.

No	Period	Annexes
1	18 – 22 Jan 2010	3.16 & 3.28
2	13 – 16 Apr 2010	3.17 & 3.29

The course covered a general introduction (background information, underpinning surveys, purpose of the SBR, the role of a register in an NSI); EU legislation and confidentiality; the structure of the register and data content (commonly held variables, ID numbers and enterprises, coding of enterprises on the register, identifying and coding local units and local kind of activity units); maintenance of the business register (internal and external data sources; updating and developing the register); using the business register as a sampling frame (alternative methods and use of stratification, weighting and estimation procedures, relationships with other statistical domains such as national accounts); business demography (births, deaths, demographic analysis). The Training method was based on lectures using PowerPoint slides and incorporating practical exercises on business register structures. The Evaluation reports showed that the course was well received. In total on two courses were trained 33 statisticians (18+15) and the lists were in annexes 3.16 and 3.17.

Activity 3.4 – A Study Visit to an EU Member State

➤ **V1** Research country for suitable study visit and

➤ **V2** Organise 5 day study visit for 5 members of the business statistics team

A successful 5- days Study Visit for 6 statisticians was held in September 2010. The Key Expert arranged, designed and hosted the Study Visit in the UK Statistical Office (ONS). Reports on preparation and realization of the Study Visit are included at Mission Reports 9, 10, and 11 in Annexes 3.9, 3.10 and 3.11.

The main areas covered by the study visit were:

- UK Statistics Authority Statistical Strategy
- Data Collection (Life of a form, processing tour, modern technology and initiatives)
- PRODCOM
- Labour Force Survey
- Structural Business Register
- Tourism and the International Passenger Survey (IPS)
- Statistical Business Registers
- Information Technology
- Business Surveys
- Classifications
- Business Profiling
- Business Register Employment Survey
- Web Development Programme

The Key Expert was able to supplement the ONS staff, thereby making the visit free of charge and acted as a liaison person between ONS and MONSTAT. This was an important role as the Key Expert had a detailed knowledge of the Office, the staff and experts who could be contacted when extra sessions were required. He also identified areas during the visit for additional briefing, by arranging for extra sessions (for example on new computer systems, additional briefing on the Structural Business Survey Business Profiling Survey, an extra session on the IT systems to demonstrate a 'state of the art' browser (JAVA) based system, an additional session on Methodology for a late arrival in the study team, an additional session organised on form design software for IT team members).

Activity 3.5. Improving the availability of business statistics, especially the Structural Business Statistics (SBS) and Short Term Statistics (STS)

➤ BS1 Create an action plan to improve Short Term Surveys.

Following the initial report set out in **activity 3.1 A1** the initial action plan was set out in Mission Report 1 in Annex 3.1. The main points were that:-

- The requirements for Short Term Statistics as set out in Council Regulation (EC) 1165/98 of 19 May 1998 and updated by Commission Regulation (EC) 472/2008 and by Commission Regulation (EC) 329/2009 were mainly met.
- The main areas where the review revealed the MONSTAT surveys were failing to meet the EC regulations were as follows:

NACE 1.1 Section B, C, D, E Mining, Industry, Electricity and Water

- i) All manufacturing variables were collected except there was a need for a domestic/non-domestic split
- ii) The Index of Production needed substantial updating for, structure, weights and deflation.

NACE 1.1 Section F – Construction

- i) No monthly production figures existed
- ii) A construction costs index needed to be developed.

NACE 1.1 Section G Wholesale, Retail and Repair

- i) A quarterly survey was required for Wholesale activity;
- ii) A monthly survey was required for Repair of motor vehicles activity.

NACE 1.1 Section H – Hotels and Restaurants

- i) Quarterly catering survey to be updated to collect information on output costs, salaries, and hours worked.

NACE 1.1 Section I – Transport and Postal and Telecommunications

- i) Monthly (or quarterly) survey to be updated to collect information on turnover and persons employed.

NACE 1.1 Sections J-Q

- i) Although much of the data here was provided by other government sources there were few MONSTAT surveys in these sections. More surveys required for the financial (J), real estate (K) sectors, (M) private education, (N) Health and Social Work and possibly (O) Social and Personal Services;
- ii) Generally the survey of wages and salaries provided gross wages, but some sectors already collect it separately. This survey to be applied across all sectors required the sample to be significantly redrawn.

- Although several options for change were noted it was decided to review the current portfolio of monthly/quarterly sectoral business surveys and adapt them and augment them so that they would provide the required information within the prescribed frequency and timeliness goals. In addition a totally new survey was implemented for ‘Other Services ‘to cover the problems identified in NACE Categories G-Q. See reporting below under activity 3.6.

Other Completed actions under Activity 3.5 and activity BS1.

Shown below are details of deliverables covered in BS2-BS5 but other activities have been completed. In addition the work covered in Activity 3.6 has been used in improving Short Term Statistics.

- 1) The Construction Survey was amended and a sample was redrawn to reflect all enterprises registered as construction businesses in the Register;
- 2) A Base weighted Construction Index was prepared. Jasna Pugar (STE) was responsible to review the current statistics and to consider how a base weighted Index of Construction might be set up. The Monthly Index of Construction is ultimately required to meet the EU STS regulation. A proposal was put in place to implement a simple IoC on the basis of an “Hours Worked” approach during 2011. Some back data have been identified. In due course, it is hoped that a Construction Index based on turnover will be in place, but at present a proxy index is suitable to meet the EU requirements.
- 3) A Review of Transport Survey Sample took place. Some limited work was conducted on the transport survey sample. The sample had to be redrawn to reflect the NACE Rev 2 coding structure and this is described in mission report 12;
- 4) The Retail Trade Index was amended and adapted to new weighting system (-mission report 15). The new spreadsheet system created for the Quarterly Survey of Services was applied to the August 2010 data to create correspondence point between the old and the new grossing systems. A number of problems were identified, mainly because the precise amendments made in the old estimation system were not well documented.

The following activities took place:

- The sample population and sample details were loaded into the spreadsheet;
- New weights were created;
- A comparison with the previous methodology was drawn – possible areas of error identified;
- Data studied and new imputations/outliers were declared;
- A broad correspondence with the original estimate was achieved

➤ **BS2** Create and action a plan (if necessary) to improve Structural Business Surveys

The initial action plan is set out in Annex 3.3. This followed the implementation of the first SBS conducted by SIDA (The Swedish International Development Cooperation Agency). In general it was found that the basic SBS implemented for 2008 broadly met the EC Regulation Requirements, however a number of recommendations were put forward and these were developed over the two years of the project.

These recommendations included:

- Improving the production software to allow comparisons at aggregated levels.

Several improvements were made for checking and editing of data. A new grossing system, set up for the quarterly survey of 'Other services', described in activity 3.6, was used as part of the SBS process. This allowed a more automated method of discovering errors in the data and establishing which errors were most significant.

In addition SPSS was made available to the team which allowed a quicker reporting process, which in turn allowed for tables to be produced which would also help to identify errors. A three day SPSS training course was implemented. Following the implementation of SPSS, the response rate analysis by variable became possible and helped target follow-up questions to enterprises. The use of SPSS also allowed comparison of key variables over time and eventually would aid and speed up editing.

- Improving and automating the Imputation procedures.

The project has had limited success developing imputation but a range of imputation procedures are available because of an automatic comparison with the Statistical Business Register for enterprise and employee details. Also automatic comparison is now made with the Annual Financial Reports submitted to the Commercial Court. The delivery of this data set has been speeded up a little and in due course it is hoped that the 2010 dataset can be delivered to the National Accounts in August 2011.

- Preliminary results should be published – publication software in particular needs to be improved.

Publication should now be speeded up as data are now available on SPSS and staffs have been trained in the use of SPSS. For example ad hoc tabulations of aggregate tables can allow targeted checking of a range of issues and draft publication table scan be produced.

- Documentation

Better documentation is still needed, although holding the data in SPSS does in itself improve documentation.

➤ **BS3 Review and consider data collection systems and if necessary make recommendations**

Data collection systems were constantly being reviewed during the project. A report on this activity was originally proposed to offer technological solutions to data collections such as those used in other European countries. However, the resources available to MONSTAT to create, for example, a Touchtone Telephone Dialling System for data collection or a web based collection were extremely limited. The use of relatively inexpensive staff in regional offices meant that it was unlikely that investment for high cost technological systems could be justified. As a result the project concentrated on developing new surveys using the existing data collection systems (which were mainly paper-based).

➤ **BS4 Review the calculation of the Index of Production and produce a value added method**

A highlight of the project has been the creation of a totally new system for the creation of the Index of Production. The work has been conducted by Robin Youll, a short term expert, who has made six visits to MONSTAT. Mission reports and User guide for IPI are in the annexes in the table:

No	Period	Annexes
1	19 – 26 January 2010	3.18
2	17 – 21 May 2010	3.19
3	13 – 17 September 2010	3.20
4	13 – 17 February 2011	3.21
5	14 – 18 March 2011	3.22
6	23 – 27 May 2011	3.23 & 3.35

The STE has reviewed all the processes involved in the IoP production, identified changes to the processes and created a new IT system for automatically producing the index. The new IT system has been handed over to the Industry Statistician and is now supported by the IT branch.

In summary the following have been achieved:

- Change to estimation methodology

The technical expert has changed the IoP so that:

- the IoP is estimated using deflated output;
- turnover estimates have been adjusted onto an ‘output’ basis using data on average prices and stocks;
- Aggregation weights have been updated from 1997 to 2009 based.

- Capture of production turnover value data

MONSTAT now capture the value data from the IND-1 form. Back data for the last 3 years (from January 2007) have been produced.

- Transition arrangements to the new methodology.

In the immediate term the volume index has been maintained. The evaluation of the quality of the production value series has been carried out in parallel with the published series.

MONSTAT have introduced the new index in 2011.

- Development of new IT platform.

The STE has built an integrated set of modular tools which run off an MS Excel ‘front-end’, but use SQL/MS Access functionality for processing and storage. The front end user has access to the data via MS Excel system which includes:

- A data capture module in an Excel ‘front end’, data storage in MS Access;
 - NACE/CPA classification and the annual weights maintained in MS Excel, to provide flexibility for change (e.g. to NACE Rev 2/PRODCOM);
 - a production estimation module (embedded in MS Access, but running from the MS Excel front-end) to produce three basic sets of indexes based on Production volumes, production values (output) and turnover values;
 - An IoP production module based in MS Excel. This brings together the production output index and the producer prices to produce a deflated index in line with Eurostat guidance for STS;
 - A table formatting tool based in Excel which will include flexibility over the results presented in tables.
- Preparation for and introduction of NACE Rev 2
The new system allows for the implementation of the new NACE Rev2 classification system and the IT system supports the production on both NACE R1 and R2.

- Documentation

A comprehensive documentation of the system for users as well as technical documentation have been completed and are available.

- **BS5** Provide some training on the use of Seasonal Adjustment (with Component 1)

It was not possible to find an opportunity within the timetable of key statistical staff to learn and develop their skills in Seasonal Adjustment. This requires not just a training course using a tool such as SAS or X11 ARIMA but also demands that staff can apply this to their routine work schedules on a daily basis. It was thought that such a significant investment in Statistician time was not practical during the timescale of the project. There remains a need for MONSTAT staff to be trained in seasonal adjustment techniques.

- **BS6** Review the imputation system for the structural business survey and propose a method of implementation

This has only been partly successful and has been reported above under BS2 bull point two.

- **BS7** Identify metadata requirements (with component 1) for business surveys

Metadata was the main activity of Component 1 and metadata requirements were identified for all statistics, including business statistics. There has been liaison and joint working with component 1 and the following has been achieved:

- The Euro SDMX Metadata Standard (ESMS) was adopted and metadata were collected from selected subject-matter domains and consolidated according to the standard. These survey/data

collection descriptions were uploaded into a Metadata base that was also developed during the project. The following ESMS business survey descriptions are currently in the database: Structural business Statistics, Retail trade survey;

- There is also a Glossary of statistical concepts and definitions in the Metadata base, with a total of 185 definitions (in English), including Structural business statistics (15), Tourism statistics (3), Construction statistics (7) and Retail trade (3).

Activity 3.6. Create a set of quarterly surveys to meet the requirements of the Quarterly National Accounts.

- Q1 To design a questionnaire for quarterly surveys with component 2 AND
- Q2 To design a sample plan for quarterly surveys with component 2 AND
- Q3 To evaluate the questionnaire pre-test results with component 2 AND
- Q4 Set up a pilot data collection system for new short term surveys AND
- Q5 Set up new data collection systems to deliver new quarterly set of data in 2010 AND
- Q6 To create an editing strategy for short term datasets AND
- Q7 To develop imputation methods for missing data

This activity of the project has been ongoing since November 2009. It is therefore referred to in most of the mission reports from report 3 onwards in Annex 3.3. A new survey has been set up.

For NACE Rev1.1 categories G, I, J, K, M, N and O a new Quarterly Survey of Other Services (QSOS) has been set up. The quarterly data means that the European Regulation on Short Term Statistics is largely met. Also after consultation with National Accounts and the NA ICON expert it was felt that the quarterly data would in due course feed into the Quarterly National Accounts.

A full description of the QSOS is provided in the QSOS course manual in Annex 3.38, and a summary is available in Mission Report 14 in Annex 3.14. The new system includes:

- a new survey form;
- a sample of 500 enterprises has been designed based on the Business Register NACE Rev1 breakdown;
- Data have been collected since quarter 1 2010 and at the time of writing 5 quarters data had been collected.
- A new Excel based survey analysis system has been developed, again described in detail at Annex 3.38 The system allows:
 - for data to be entered;
 - outliers to be marked;
 - imputation to be applied weights to be created;
 - An analysis of the data to be produced.

The most recent analysis covered the year 2010 has been produced and is included in annex 1, in Mission Report.15. which is in annex 3.15 of this report. It has been difficult to obtain a basis for comparison of the

first year's data. As a result data have been produced at division and section level and most compare reasonably well with SBR totals although there are some exceptions.

It is clear that, as is usual in the case of a new survey, the data need to be treated as 'experimental' for the first two years. In due course, as the sample is refreshed, the data will become more robust and should be published. Initially data could be published at a section level. In order to publish the quarterly data on change, which is what is required for the European Regulation there will be a need to define and apply deflation methods to the data to identify the real increase in service sector activity.

In January 2011 a training course was held to explain the Excel spreadsheet analysis system which had been devised. It was thought that this system would have wider uses in the MONSTAT Business Statistics section. The weighting and error checking system could be applied to other surveys including, Construction Statistics, the Structural Business Survey and the Retail Trade Survey (see presentations Annexes – 3.39-3.42)

Following the training course, the spreadsheet system was applied to the Retail Trade system in order to rework weights. It has also assisted in identifying outlier data and error checking. The course presenters (ICON staff and Andrija Djurovic) received excellent feedback on the course which also developed MONSTAT staff's appreciation of data cleaning and editing.

Activity 3.7 Harmonising the tourism survey on arrivals and overnight stays at accommodation establishments with EU standards. This includes identifying the population, survey design, data collection, processing and analysis, documentation and dissemination.

The work on improving Tourism Statistics has been ongoing throughout the period of the project and has been referred to in most of the 15 mission reports. The initial analysis of the status of Tourism Statistics was conducted in November 2009 and a paper was included in the Mission Report 3 which is in Annex 3.3.

The paper proposed several actions which included:

- i) Development of new/enhanced surveys. In particular the development of a day visits survey and an enhancement to the Household Expenditure Survey should be progressed as quickly as possible;
- ii) A short term expert is recruited (25 days), to review further the economic data required to create a TSA and to produce an initial calculation and methodology for a 'basic' TSA for Montenegro;
- iii) Further discussions to take place with interested organisations including the Ministry of Tourism and the Central Bank and the National Tourism Organisation of Montenegro
- iv) Consideration should also be given to a Cross-Border Survey to collect details of inbound tourists and their spend;
- v) The development and improvement of a register of private sector accommodation must take place in the longer term.

As a result of the initial paper and proposals several sub-activities were identified and these are described in more detail below

➤ **T1. Set up a pilot survey of tourists in accommodation**

A basic MONSTAT survey already existed and showed the number of accommodation nights. In addition another limited survey already existed and was operated by the National Tourism

Agency. It was thought that this was sufficient for the future calculation of the Tourism Satellite Account (TSA).

➤ **T2. Set up a study visit to Croatia Stats Office to study similar tourist surveys**

A successful Study Visit by the Tourism Statistician to the Croatian Statistics Office took place in spring 2010.

➤ **T3. Prepare proposals to enlarge the Household Budget Survey to include questions on tourism spend to provide data for updating tourism survey on a regular (annual basis)**

A new set of questions have been designed and included in the Household Budget Inquiry. These provide some basic data on the Tourism spend of Montenegrin nationals and the data are available.

➤ **T4. Set up database for short term day visits within Montenegro**

This was not completed. Although a proposal was put to MONSTAT management the limited amount of resources which could be put to Tourism statistics meant that the survey of day visits was conducted. It is believed that a Tourism Satellite Account (TSA) can be constructed without these data.

➤ **T5. Consider ways of extending details of private sector rented accommodation.**

Although, an examination of the “Visitor Nights” survey was conducted it was found that the local regional office were able to make reasonable estimates of the new private sector tourism accommodation. Also, conducting a thorough survey of all private rented tourism accommodation was thought to be resource intensive and again could not be financed in the short to medium term by MONSTAT. This is something which will need to be considered in a future project on tourism.

➤ **T6. Prepare draft of National Account Tourism Satellite Account (TSA)**

Lea Bregar a Short Term Expert was involved in establishing the work needed to produce a TSA. It included:

- a) Desk research of original methodological materials and questionnaires provided by MONSTAT, Department of Tourism Statistics. Meetings and discussions held with key data providers for TSA (MONSTAT, National Bank of Montenegro, Ministry for Tourism, National Tourism Organisation, and academic institutions).
- b) Two day workshop carried out to establish the statistical needs for the all authorities involved in tourism and in particular the creation of a TSA
- c) Key data sources relevant as data input for compilation of Montenegro TSA separately by 10 tables were identified; main deficiencies of identified data sources were roughly assessed and missing meta information described. Strategies to compile TSA for Montenegro were outlined at the level of a TSA table.
- d) 2 day-work shop for 17 participants for presenting the main fact-finding issues for Montenegro for starting experimental TSA and main methodological bases for TSA.

The work is reported in a mission report and Assessment report were in Annexes 3.27, 3.36, 3.37 and the slides of work-shop in annexes: 3.30, 3.31, 3.32 and 3.33.

As a result of this work and the work by the Business Statistics Key Expert, a new project for calculating the TSA for 2009 experimentally was initiated. The results were presented at end of June 2011.

3.3.3 *Recommendations for future work*

The following recommendations are put forward for future work:

1. Develop Business Statistics with the Industrial Community
 - i. It is clear that the profile of MONSTAT within the business community is not high. This is apparent in the work that is needed to get a new survey up and running. Enterprises do not understand the need for statistical collections and are reluctant to send in responses until contacted several times. The relationships between businesses and the MONSTAT local offices could be improved, through consultation, liaison with business organisations, and publicity. In addition some kind of enforcement of statistical legislation conducted in a relatively high profile way would encourage enterprises to respond. Finally developing the website to show the links between data collection and economic statistics could be considered.
2. Business Statistics to work more closely with National Accounts to define better, and agree, statistical data requirements and timetable.
 - i. At present National Accounts are not making good use of all the Business Statistics data. In some areas the NA actually operate their own surveys. All surveys should be conducted by the Business Statistics Unit but better and fuller discussions needed to take place between the NA and BS units. In particular quarterly data recently collected on Services and SBS data need to become part of the NA data set.
3. Development of Structural Business Register
 - i. The SBR still requires improvement in accuracy. In particular the SBR should build on the SBR Register Survey to improve register accuracy. Over time all major enterprises (>20 employees) should be surveyed and the correct NACE Code applied together with accurate details of employment and turnover.
 - ii. There is a real need to improve the address accuracy on the Register. The Commercial Court and tax authorities need to be encouraged to collect precise, accurate data at the first point of collection. MONSTAT also needs to approach other areas of government (including municipalities etc) to move towards the creation of fully accurate address system for Montenegro. This will undoubtedly benefit many other agencies in Montenegro
 - iii. A very good way to improve the register would be to conduct an economic census. Such a census of around 22,000 enterprises would provide a good benchmark for data on addresses, NACE coding, local units and turnover. This would also have a real practical benefit for the National Accounts.
4. Development of Structural Business Survey, improving the timetable.
 - i. It is important that the SBS timetable is speeded up, in order that the data can be used within the National Accounts timetable. At the present time the fact the NA do not use

the data has meant that the data are not sufficiently scrutinised. A continuation of the project work to link databases and effect automatic imputation would be valuable, as would the increased use of SPSS to produce early tables for checking

5. Development of Short Term Statistics

- i. Build on the Quarterly Survey of Services to create of an Index of Services Activity:
 - In particular there is a need to reproduce the quarterly analysis for 2011 once all quarters in received. The data then need to be deflated so that an index can be produced at constant price.
 - Increasing the response rate. It is disappointing that the response rate in quarter 1 2011 has fallen. This is partly because local offices have been concentrating on the population census but also because resources available for the Services Sector work are limited. Some effort needs to go into to maximising the response rate.
- ii. Finalise the Index of Construction
 - A simple base weighted Index of Construction based on ‘hours worked’ has been produced. In due course a better index which complies fully with the EU regulation should be produced and would be based on deflated turnover data(land, labour, materials costs etc);
- iii. Further work on some surveys to improve NACE Rev2 samples and some more limited improvements can be made to many business surveys , so that data are better checked and edited;
- iv. Further improvement of tourism statistics and the creation of a Tourism Satellite Account (TSA);
 - However, although an experimental TSA is currently being produced many of the tables in the TSA will lack information in a number of areas. In particular the private rented sector data and the cross border data on tourism are very weak.
 - Improving quality of HBS module for touristic expenditure: set of questions, sampling, data checking, estimation;
- v. MONSTAT staff to be trained in seasonal adjustment techniques.
 - At present several surveys are not seasonally adjusted (index of construction, production, retail trade and services). This needs to be rectified but does require additional MONSTAT resources to be made available. It is doubtful whether existing statisticians with their current workloads could take on the additional burden of seasonal adjustments. Seasonal adjustment courses therefore need to be run but these must be followed up by active use of the SA techniques.

3.3.4 *Indicators for achievements*

- Work plan for SBS and STS set up and activities planned
- Number staff trained in systems, including SPSS, IT, surveys and SBR
- Workshop materials provided (agenda, list of participants, workshop papers)
 - Materials for TSA workshop, QSOS workshop

- New system for calculating IPI is operative
- New IPI release is prepared for dissemination
- NACE 2 is starting with implementation in statistical system
- 3 Study visits carried out
- Reports on compliance with EU regulations were produced
- New survey for domestic touristic expenditure in tourism is set up

4 CONTRACT MANAGEMENT

4.1 Resources utilisation

4.1.1 Overview of the working days used

99.3% (or 863) of working days out of a total 869 were used in the project and 0.7% (or 6 WD) remain. 100% of the junior short term experts' working days were used (100% or whole total 130 wds); while 99.5 % (or 216 of total 217) of senior short term experts' working days allocation was taken up. The level of usage of key experts' working days was 99.0% (or 517 of total 522).

During the implementation of the project, some changes on the initial distribution of working days by key experts and senior short-term experts were made to better follow up the needs and priorities of MONSTAT. After the Second Interim report, there was an increase in the number of working days in Component 2 following a request by Monstat.

The tables below give an overview on the working days spent by the different project experts and by components.

Table 1 Review of experts' working days by progress reports' periods

Key experts	Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
Key experts	522	517	147	130	129	111	5
Senior short term experts	217	216	19	61	56	80	1
Junior short term experts	130	130	0	10	21	99	0
Total	869	863	166	201	206	290	6

Table 1a. Review of experts' working days by progress reports' periods, %

Key experts	Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
Key experts	100.0	99.0	28.2	24.9	24.7	21.3	1.0
Senior short term experts	100.0	99.5	8.8	28.1	25.8	36.9	0.5
Junior short term experts	100.0	100.0	0.0	7.7	16.2	76.2	0.0
Total	100.0	99.3	19.1	23.1	23.7	33.4	0.7

Table 2. Review of key experts' working days by progress reports' periods

Key experts	Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
TL Lj. Popovska	202	202	61	50	40	51	0
KE1 Sari Jouhki	140	140	27	41	40	32	0
KE2 Gosse Hommes	82	80	18	21	25	16	2
KE3 John Kinder	98	95	41	18	24	12	3
Total	522	517	147	130	129	111	5

Table 2a. Review of key experts' working days by progress reports' periods, %

Key experts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
TL	Lj. Popovska	100.0	100.0	30.2	24.8	19.8	25.2	0.0
KE1	Sari Jouhki	100.0	100.0	19.3	29.3	28.6	22.9	0.0
KE2	Gosse Hommes	100.0	97.6	22.0	25.6	30.5	19.5	2.4
KE3	John Kinder	100.0	96.9	41.8	18.4	24.5	12.2	3.1
Total		100.0	99.0	28.2	24.9	24.7	21.3	1.0

Table 3. Review of senior short term experts' working days by progress reports' periods

Senior short term experts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
C1	Quality issues	38	37	0	19	6	12	1
C2	National accounts	78	78	0	18	24	36	0
C3	Business statistics	101	101	19	24	26	32	0
Total		217	216	19	61	56	80	1

Table 3a. Review of senior short term experts' working days by progress reports' periods, %

Senior short term experts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
C1	Quality issues	100.0	97.4	0.0	50.0	15.8	31.6	2.6
C2	National accounts	100.0	100.0	0.0	23.1	30.8	46.2	0.0
C3	Business statistics	100.0	100.0	18.8	23.8	25.7	31.7	0.0
Total		100.0	99.5	8.8	28.1	25.8	36.9	0.5

Table 4. Review of junior short term experts' working days by progress reports' periods

Junior short term experts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
C1	Quality issues	130	130	0	10	21	99	0
	%	100.0	100.0	0.0	7.7	16.2	76.2	0.0

Table 5. Review of experts' working days by progress reports' periods in Component 1

Component 1 Quality and metadata		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	Sari Jouhki	140	140	27	41	40	32	0
SSTE	Senior short term experts	38	37	0	19	6	12	1
JSTE	Junior short term experts	120	120	0	10	21	89	0
Total		298	297	27	70	67	133	1

Table 5a . Review of experts' working days by progress reports' periods in Component 1, %

Component 1 Quality and metadata		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	Sari Jouhki	100.0	100.0	19.3	29.3	28.6	22.9	0.0
SSTE	Senior short term experts	100.0	97.4	0.0	50.0	15.8	31.6	2.6
JSTE	Junior short term experts	100.0	100.0	0.0	8.3	17.5	74.2	0.0
Total		100.0	99.7	9.1	23.5	22.5	44.6	0.3

Table 6 . Review of experts' working days by progress reports' periods in Component 2

Component 2 National accounts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	Gosse Hommes	82	80	18	21	25	16	2
SSTE	Senior short term experts	78	78	0	18	24	36	0
JSTE	Junior short term experts	0	0	0	0	0	0	0
Total		160	158	18	39	49	52	2

Table 6a . Review of experts' working days by progress reports' periods in Component 2

Component 2 National accounts		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	Gosse Hommes	100.0	97.6	22.0	25.6	30.5	19.5	2.4
SSTE	Senior short term experts	100.0	100.0	0.0	23.1	30.8	46.2	0.0
JSTE	Junior short term experts	-	-	-	-	-	-	-
Total		100.0	98.8	11.3	24.4	30.6	32.5	1.3

Table 7 . Review of experts' working days by progress reports' periods in Component 3

Component 3 Business statistics		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	John Kinder	98	95	41	18	24	12	3
SSTE	Senior short term experts	101	101	19	24	26	32	0
JSTE	Junior short term experts	10	10	0	0	0	10	0
Total		209	206	60	42	50	54	3

Table 7a . Review of experts' working days by progress reports' periods in Component 3

Component 3 Business statistics		Total in Project	Total used	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
KE	John Kinder	100.0	96.9	41.8	18.4	24.5	12.2	3.1
SSTE	Senior short term experts	100.0	100.0	18.8	23.8	25.7	31.7	0.0
JSTE	Junior short term experts	100.0	100.0	0.0	0.0	0.0	100.0	0.0
Total		100.0	98.6	28.7	20.1	23.9	25.8	1.4

4.1.2 Incidental budget

The incidental budget is classified in four budget lines, for better following the spending:

B1- Office costs, B2- Study visits, B3- Workshops, presentations, trainings and B4- Others (Surveys, etc.)

All spending is recorded and classified under the exact budget line. This is done by using ICON Internet based financial tool that consolidates the spending on all locations and provides up-to-date information on funds used on monthly basis and presented regularly in Monthly reports and other progress reports.

During the implementation period, the limits in budget lines B1-B4 were changed a few times with an aim of more effective usage of the Incidental budget. The Project team was following carefully Monstat's needs, and its acceptance a certain activity or a change to some circumstances for implementation.

In the project 98.0% (or 79,420€) of the Incidental budget was utilised with the remainder of 2.0% (or 1,580 €).

Table 10. Review of expenditure by reporting periods from Incidental cost, €

Incidental costs		Total in Project	Total used in project	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4	Rest
B1	Office cost	19,000	18,954	4,305	5,381	4,672	4,597	46
B2	Study visits	36,500	36,370	772	516	23,475	11,607	130
B3	Workshops, presentations, trainings	15,500	14,180	0	3,276	1,829	9,075	1,320
B4	Others (Surveys, etc.)	10,000	9,915	0	3,920	5,515	480	85
Total		81,000	79,420	5,076	13,093	35,492	25,759	1,580

Table 10a. Review of expenditure by reporting periods from Incidental cost, %

Incidental costs		Total in Project	Total used in project	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4,	Rest
B1	Office cost	100.0	99.8	22.7	28.3	24.6	24.2	0.2
B2	Study visits	100.0	99.6	2.1	1.4	64.3	31.8	0.4
B3	Workshops, presentations, trainings	100.0	91.5	0.0	21.1	11.8	58.6	8.5
B4	Others (Surveys, etc.)	100.0	99.2	0.0	39.2	55.2	4.8	0.8
Total		100.0	98.0	6.3	16.2	43.8	31.8	2.0

Table 10b. Review of expenditure by reporting periods from Incidental cost, %

Incidental costs		Total in Project	Total used in project	Total used in period of IR1	Total used in period of IR2	Total used in period of IR3	Total used in period of IR4,	Rest
B1	Office cost	23.5	23.9	84.8	41.1	13.2	17.8	2.9
B2	Study visits	45.1	45.8	15.2	3.9	66.1	45.1	8.2
B3	Workshops, presentations, trainings	19.1	17.9	0.0	25.0	5.2	35.2	83.5
B4	Others (Surveys, etc.)	12.3	12.5	0.0	29.9	15.5	1.9	5.4
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

4.2 Contract amendments

During the life-circle of the project there were three changes to the number working days with contract addendums.

4.2.1 First contract addendum: Increasing the number of key experts days and senior short-term experts days in component 2 for National Accounts

In the first change, after the first interim reporting period and following a request from Monstat, the first contract addendum increased the working days of KE2 in component 2 by an additional 20 days and this involved new activity in component 2 with an additional 20 working days for senior short-term experts. It meant additional financial funds of 39,640 € and the total budget of the project was increased from 776,200 € to 815, 840 €.

The main purpose of change was to maximize the impact of Component 2, related to the harmonization of the National Accounts (NA) with the ESA'95. This required the preparation of the foundations for producing quarterly National Accounts and also to improve situation with survey of agriculture price statistics.

The Re-allocation within the fees was approved on 8 February 2010, with the Approval letter from European Union Delegation to Montenegro - D P/ mma/00209/2010).

4.2.2 Second contract addendum: Redistribution of working days among key expert and short-term experts in component 3 for Business statistics.

During the Inception period, key expert 4 of the Component 3 detected the need for more senior short-term experts' working days. Business statistics has a set of different specific requests which needs narrow sub-specialized expertise and help. One of the possible solutions was to decrease the number of key expert working days and to increase the number of senior short term experts' working days. In the first year of the project it was agreed that the most acceptable solution would be to transform 50 key expert working days in 47 senior short expert working days.

Re-allocation within the fees was approved on 24 November 2010, with the Approval letter from European Union Delegation to Montenegro - D (2010) DP/mma/02516/2010).

4.2.3 Third contract addendum: Redistribution of working days among key experts

The last re-allocation was made on the end of the project for purpose of more effective finalizing Final report among team leader and key expert 4 on 01 August 2011.

Re-allocation within the fees was approved on 01 August 2011, with the Approval letter from European Union Delegation to Montenegro - D (2011) DP/dr/01672

Table of changes the working days by experts

Experts WDs	ToR and Inception period	First contract addendum	Second contract addendum	Third contract addendum
Team leader	200	200	200	202
KE2 Component 1 - Quality Issues	140	140	140	140
KE3 Component 2 - National Accounts	60	82	82	82
KE4 Component 3- Business Statistics	150	150	100	98
Senior STE	150	170	217	217
Junior STE	130	130	130	130
Total	830	872	869	869

5 ANNEXES

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