

TWINNING CONTRACT

AM/14/ENP/ST/15

Strengthening of the National Statistical System of Armenia – Phase II



MISSION REPORT

on

Statistical Information Dissemination System

Activity 1.5: Website improvement I

Mission carried out by

Mr. Jesper Ellemose Jensen, Statistics Denmark

30 August - 2 September 2016

Final version



National Statistical Service
Republic of Armenia



Expert contact information

Jesper Ellemose Jensen
Statistics Denmark
Sejrøgade 11
DK-2100 Copenhagen Ø
Denmark
Tel: +45 3917 3244
Email: jej@dst.dk

Table of contents

1. General comments.....	4
2. Assessment and results.....	4
3. Conclusions and recommendations	13
Annex 1: Terms of Reference	15
Annex 2. Programme for the mission.....	16
Annex 3: Persons met	17
Annex 4: Selected principles and Indicators from Code of Practice	18

List of Abbreviations

API	Application Programming Interface
CMS	Content Management System
CoP	Code of Practice - Eurostat
EU	European Union
NSS	National Statistical System (of official statistics)
NSSRA	National Statistical Service of the Republic of Armenia
QAF	Quality Assurance Framework

1. General comments

This mission report was prepared within the Twinning Project “Strengthening of the National Statistical System of Armenia – Phase II”. This was the sixth activity in component 1 and the actions planned for this activity were carried out as scheduled.

The purposes of the mission were:

- Discussion on how to improve the website to increase user-friendliness and usability
- Evaluation of current web platform in terms of potential for improvement within the project

The MS expert would like to express his sincere thanks to all officials and individuals met for the kind support and valuable information which he received during the stay in Armenia, and which highly facilitated the work. The views and observations stated in this report are those of the MS expert and do not necessarily correspond to the views of EU, NSSRA or Statistics Denmark.

Two issues in the form of data capture / electronic data collection and the use of SDMX was mentioned by the NSSRA staff as development areas for NSSRA web work, it is the opinion of this author that both issues are highly relevant and fruitful but that they are way to substantial and demanding to be addressed inside the scope of this Twinning project. From an organizational perspective, neither data collection nor data exchange (SDMX) fits well with the dissemination unit. The issues needs the attention of subject matter units, methodology and IT division.

Three conclusions appear from the mission:

1. Evaluate based on formal criteria in terms of necessary content and services – the www.armstat.am performs as expected.
2. Evaluated based on users possibilities for finding data according to their needs the web site performance and its navigation / content structure needs to be improved.
3. A major rework of the present www.armstat.am site fulfilling the expectations of the directly involved NSSRA staff and national and international users of Armenian statistics will require a major investment in hardware and software well outside the scope of this Twinning project.

2. Assessment and results

As mentioned above the activity had two main purposes. At the beginning of the activity, the NSSRA staff presented their visions and wishes for various web sites.

2.1 NSSRA – Self-evaluation of current websites

The dissemination and IT division had prepared a list of requirements and thoughts describing how they would like to develop www.armstat.am, armstatbank.am and the devinfo website from Unicef.

On www.armstat.am the NSSRA staff has identified the following issues:

- Development and introduction of online statistical reporting techniques (Data capture)
- Changing and restructuring the website
- Updating time series of the main macroeconomic indicators and creating interactive graphical systems and maps,
- Creating an integrated system – integrating “data bases” fields,
- Introduction of standards on data and metadata exchange (SDMX)

On www.armstatbank.am the NSSRA staff had identified the following issues:

- Introduction of statistical data through maps

- Possibility to arrange the names of the tables
- Availability of Armstatbank.am from www.armstat.am environment
- Creating search system
- Use of short links
- Show all tables - functionality

On the devinfo website no issues were reported as the websites follows the expectations of UNICEF and other involved donors. According to the statistics on web usages (google analytics) presented by the NSSRA the use of devinfo is relatively small. The use of armstat.am and armstatbank.am is generally growing. The self-evaluation and the suggested development tracks generally aligns and reflect European practices. From a European perspective, issues of data collection and data exchange (SDMX) is outside the logical scope of the dissemination unit, but instead these subjects are more logically addressed by subject matter divisions, methodology and IT.

2.2 Expert evaluations of current websites

The current web site (armstat.am) has been in use since 2009. It has been gradually extended and updated as content have been added, as the NSSRA has compiled new statistics and added new products. During the first Twinning project from 2011 to early 2013 a database, build on the Swedish PX-Web software was added to the web site and quality descriptions according to EU recommendations, was also added to the web site.

The current websites can be evaluate using two more or less fundamentally different approaches. The first approach is to compare the services provided and the available content with European / Eurostat expectations. The second approach is to ask users about their experience and use available methodologies to estimate if the site meets the requirements and expectations of users or not.

2.3 Current Website – armstat.am

European Requirements / Best practices

In twinning projects, the purpose often is to identify the status and compare the status with European best practices and European legislation. In the domain of dissemination Eurostat offers no direct legislation detailing requirements to the NSI' website. However ever to be compliant with the Code of Practice (CoP) and the Quality Assurance Frame work (QAF) the NSI's web must contain certain items / headlines and services.

A very rough outline of these requirements are found in Annex 4. The QAF is currently being translated to Armenian. When the QAF is available in Armenian, it is recommended, that the NSSRA staff works systematically through the relevant indicators of the QAF and makes sure that the dissemination policy / strategy and the www.armstat.am is complying with European best practices.

Test of user's ability to locate information

Before the summer holiday the twinning project conducted at test of the English version of the NSSRA website using on-line testers from www.usertesting.com

Based on the Danish experiences the tasks were representative of information that users often are trying to locate. In general, the users had little success in finding the information they were asked to look for. When the users were successful in locating the information it took more time than reasonably for them to locate the information.

Some of the test persons tried using the search functionality build into www.armstat.am. This was not successful.

Information architecture of current web site

The logical order and presentation of the website is very important for the user's ability to find and understand the information presented to them. It is generally recommended that the information architecture and its clarity is regularly tested. This can be done by simple "Think aloud test". Representative test persons are given a number of tasks they must complete on the website. The users then "Think aloud" stating how they interpret the site and its information architecture. This methodology is used in a more advanced form in the external testing done by the twinning project.

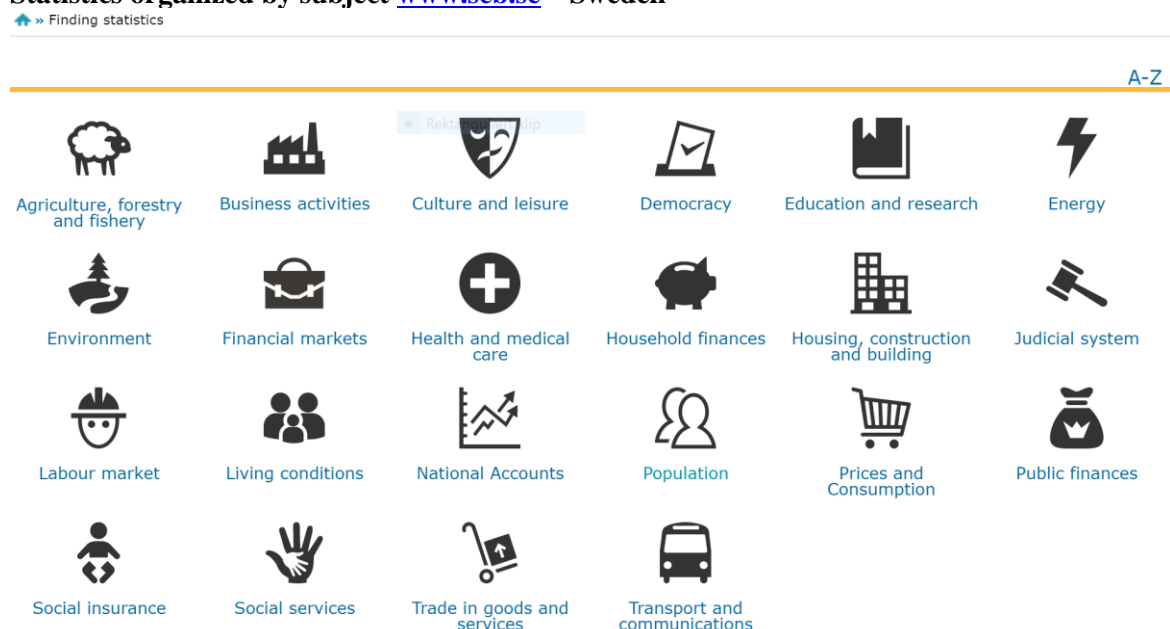
Organized by product

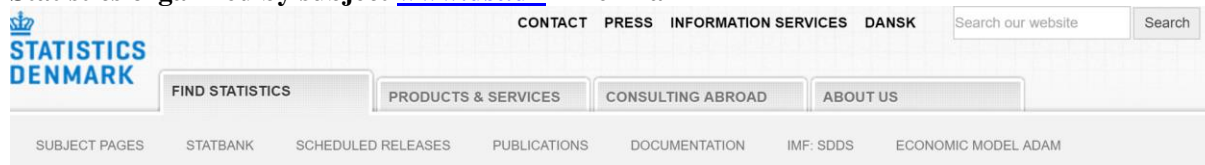
From an outside perspective, the information on www.armstat.am is organized to reflect the organisational structure of the NSSRA and organizes the information according type of product. This is a "state" or phase that all NSI websites has passed through. Historically, we have converted our printed series / publications to internet and the website have reflected this product by product conversion from print to electronic dissemination. However most users coming to a website due not know if the information i.e figures they are searching for are located in "Main Statistical Data", "Publications", "National Summary Data", "Statistical Indicators" or in one of the many databases that can be accessed directly from the first page of www.armstat.am. All experience from the various European NSI's shows that this type or organization is confusing to users and therefore ultimately not suitable to us as an organization. Users generally have no interested in understanding the difference between say "Regional Statistics" and "Main Statistical Data."

Alternative is to organize by subject

The current consensus among European NSI's is to organize website content by subject and not by product. In this setup the user will "only" have to select / navigate a subject area – inside the subject area all relevant statistics, associated metadata and quality information is then presented. Below there a number of illustrations showing organisation by subject.

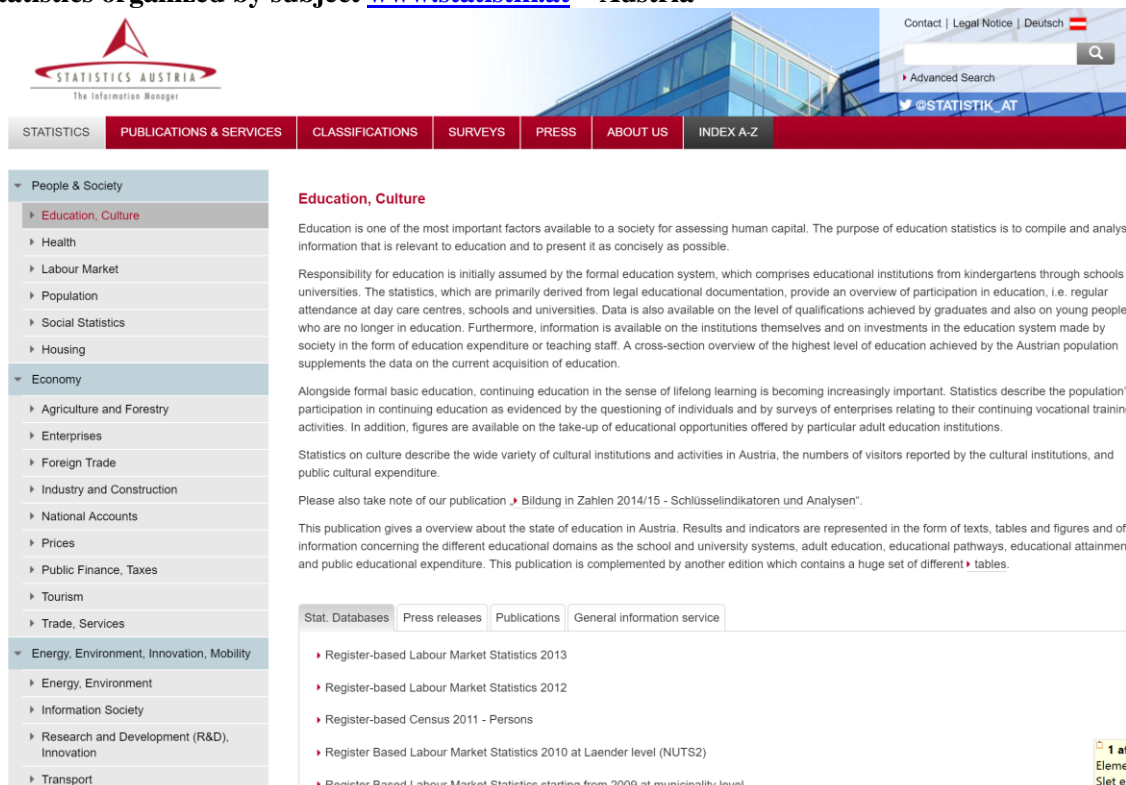
Statistics organized by subject www.scb.se – Sweden



Statistics organized by subject www.dst.dk – Denmark

Find statistics

Browse by subject:

Statistics organized by subject www.statistik.at – Austria

Moving from a product oriented to subject oriented website is a major and resource demanding undertaking. The transformation is only technically possible when all data is available in an electronic form that allows the data to be re used by software. In the NSSRA example all data must be migrated to www.armstatbank.am before they can be used and reused on www.armstat.am. The quality declarations should also be moved into a database system in order to be reused either in total or in fragments on the website.

It is my opinion that the NSSRA in the medium to long run needs to transfer from the current website to a “subject oriented” website. This transformation is not possible to carry out or contemplate inside the scope of this current twinning project. However, a transformation or reengineering of www.armstat.am, must ultimately be planned and executed by the NSSRA.

Content management system

The software (CMS – or content management system) running the current version of www.armstat.am is not entirely clear to me. However most of the software is build using ASP. ASP – or active server pages has generally been discontinued by Microsoft and replaced with ASP.NET or DOT.NET. The basis software is therefore no longer suitable and must be upgraded in the future, this should be combined with a hardware upgrade.

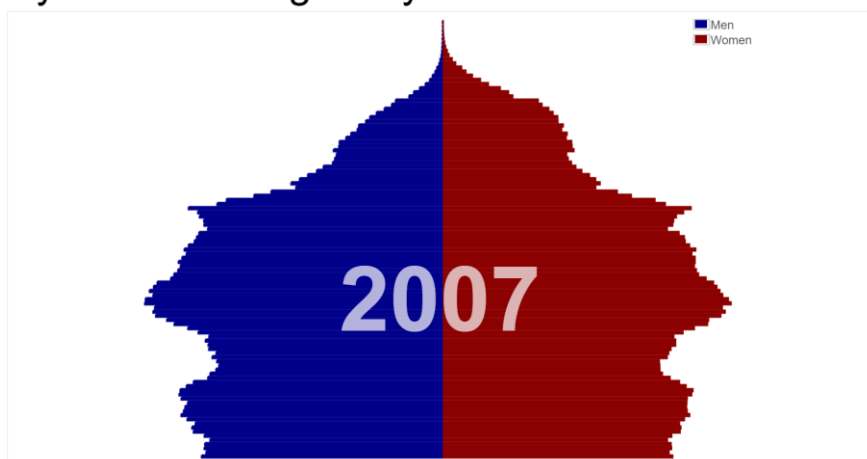
User satisfaction survey

The NSSRA cannot expect the users coming to the web site by their own initiative to locate and answer the user satisfaction questionnaire as it is currently placed on the website. During mission 1.3 Cooperation with Users and Procedures (Thygesen & Wulff on 29 February 3-March 2016) some recommendations were given. If the questionnaire is to be used for measuring the opinions of the users of www.armstat.am and www.armstatbank.am it is most likely necessary to launch the questionnaire either when users enters the web site (Pop-up) or when they leave the web site (Pop-under). It is important not mix the results of users taking the questionnaire directly from the website and those users taking the questionnaire on the website because they have been invited to do this by mail. For all practical purposes, this will result in two different survey populations. Web questionnaires / surveys can be conducted more or less sophisticated. As mentioned by Thygesen the use of dedicated software like SurveyMonkey will allow the NSSRA only to address a fraction of users and to avoid repeating the questionnaire to users who has already completed it.

Maps and visualizations

The NSSRA staff feels that www.armstat.am is lacking visualizations and maps – there is a lack of interaction between the users and the website. It is hard not agree with this opinion.

Dynamic Norwegian Pyramid



The illustration above shows a dynamic population pyramid (<http://bl.ocks.org/badosa/6103806>) that can be described as one of most important (and first) visualizations to be adopted by the international statistical community. To implement it a population time series broken down by gender, is needed.

Population Density – Norway

Norway's Choropleth Map

Population at the end of the quarter. Norway. Q2 2016

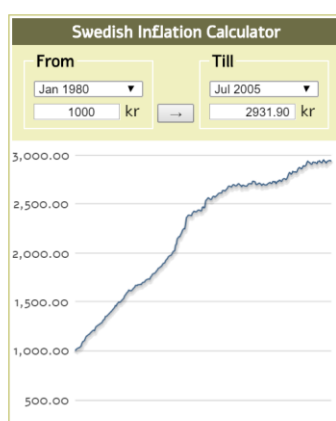


Statistics Norway (dataset 1108)

The illustration above (<http://bl.ocks.org/badosa/7856244>) is another “classical” visualization showing population density by municipality on a map.

Inflation visualized – Sweden

Swedish Inflation Calculator

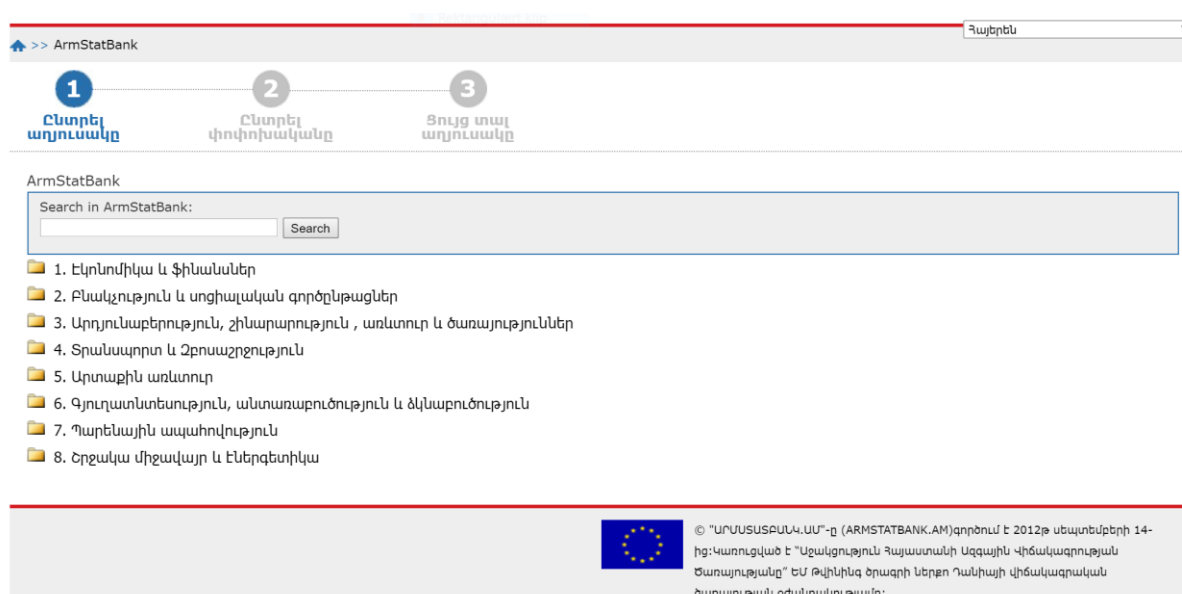


The illustration above (<http://bl.ocks.org/badosa/20735ba5bbecbc079d78>) shows the use of the consumer price index to visualize and explain to users the value of Swedish krone at different times. This is also a classical visualisation among NSI's.

These types of interactions & visualisations who are currently lacking on www.armstat.am can in principle be added. At the moment, one of the problems is that armstatbank.am and armstat.am do not have the required data available. So the first logical step will be to add this type of data to armstatbank.am

2.4 Current website: Armstatbank.am

www.armstatbank.am was launched at the end of 2012, using the first dot.Net version of PX-Web. Since then there has been at least one yearly update of the software. During this mission (1.5) the latest version of the PX-Web software (December 2015) was installed. The december 2015 version addresses a number of improvements issues raised by the NSSRA.



The main issues being the addition of a search field. The search is limited to the tables in the armstatbank.am website.

PX-Web December 2015 –version also adds an API (Application programming Interface) to armstatbank.am. The API will allow users or the amstat.am website to access data, read data and present these data on other websites in a purely mechanical way. The API will then make it possible to use armstatbank.am as a data repository for the main website (armstat.am) and of interactive visualisations. The basic visualizations presented in the previous section of the report are all technically based on drawing data from PX-Web in the so called JASON-STAT format and making transformations of these data using open source visualization tools.

Armstatbank coverage

Since www.armstatbank.am was established in 2012, the NSSRA has done a very large job on adding data and updating the data already placed in the armstatbank. This work is very recommendable. However the NSSRA needs to pursue the goal of having all of its data available in the system. When this is realized it will be possible to move amstat.am to a new technical platform and organize the content based on subjects.

Armstatbank.am and maps

Technically a map solution can be added, but it will take some work. However before this is considered the NSSRA should take step to ensure that data suitable for presentation on maps is actually available in the database. Currently there is very little or no data with a geographical break down. Only relative data (percentages and percentiles) works well on maps. It is hoped that the next activity can demonstrate maps but focus must also been on locating suitable data.

2.5 Recommendations for short-term changes to www.armstat.am

As mentioned above it is the opinion of this expert that armstat.am is in need of a major upgrade. The upgrade should change armstat.am to a subject oriented navigation and upgrade the hard and software that the system is currently running on. Such a project is clearly outside the scope of the twinning project.

In the short term (before end of Twinning) it is however recommendable to carry out a small clean up of the frontage of www.armstat.am. The measures described below should be possible to implement by editorial changes in the CMS system and by relatively small changes to the layout pages used by the CMS.

Add a new item called About NSSRA

The front page have way too many headlines / links. Introducing a major section called “About NSSRA” will follow the practice of most other NSI’s. It is recommended that this new major section contain the present headlines: *National Statistical Service of Armenia, State Council of Statistics, Work Programs and Reports, Legislation*. For users searching this type of information an additional click will be needed – but moving these headlines will make the front page appear less crowded and more clear. Further reorganization of the subheadings –below *About NSSRA* using card sorting methodology should be considered.

Consider adding a new item – For metadata

Classifications & Methodology, Metadata and Statistical Glossary are conceptually and logically connected and the NSSRA should therefor consider merging theses headings into a new major headline. Use card sorting and discussions with users to establish the most suitable headline.

Remove outdated content

Originally, it was an appreciated service to inform users about the PDF format and the Acrobat reader. Today the references to download of Acrobat and Zip files utilities are not relevant and these should be removed, from the front page.

Clear the lower left corner

In the lower left corner of the front page, there is a number of links – that are irrelevant to most if not all users. These links should be moved from the front page and place somewhere more relevant. But items like How to write a press release are mainly for internal NSSRA use and do not belong on the frontpage.

[What is an Administrative Register?](#)

[Objective Reasons of the Lack of Trust in Official Statistics](#)

[Citizens reception order in the NSS RA \(only in Armenian\)](#)

[Decisions ON APPROVEMENT OF THE ORDER ON PROTECTION OF STATISTICAL CONFIDENTIALITY](#)

[Questionnaire user satisfaction survey](#)

[Handbook "How to write a press release"](#)

[Handbook "How to organize a press conference"](#)

Consider moving the search box

The search box is currently located at the lower left corner of the front page. In general, users expect the search facility to be at the top – usually at right upper corner of the website. The quality of the search facility has not been evaluated.

Move Main Statistical Data up

Currently the releases Calendars are taking up a lot of space. A simple suggestion would be to change the order of *Main Statistical Data* and *Release Calendars*, so *Main Statistical Data* comes first.

Release Calendars

Pre-release Calendar of Statistical Indicators for 2016	Calendar of Statistical Publications	Advance Release Calendar by SDDS	Gross Domestic Product Revision Timetable
-------------------------------------------------------------------------	------------------------------------------------------	--------------------------------------------------	-----------------------------------------------------------

Main Statistical Data

	2 quarter 2016	In comparison with same period of last year (%)	In comparison with previous period (%)
Gross Domestic Product at market prices, mln. drams	1128072.6	101.5	123.9
			more
	Jul 2016	In comparison with same period of last year (%)	In comparison with previous period (%)
Indicator of economic activity	-	95.7	102.5
Volume of gross agriculture output, mln. drams	89738.0	96.2	150.6
Consumer Price Index, %	-	98.7	97.7
External Trade Turnover, mln. USA dollars	382.8	98.7	92.9
Export, mln. USA dollars	150.9	113.2	96.7
Import, mln. USA dollars	231.9	91.0	90.5
Average monthly nominal wages, drams	195791.0	99.5	106.9
			more

Merge Release Calendars into a single headline

Having a release calendar on the website is one of the requirements that springs from the CoP & QAF. Having four different calendars on the front page is a bit like having too much cake – or rather overdoing it.

I would therefore recommend that the 4 calendars are placed on a single new page- this could be named *Releases and Revisions* or something similar. The headline *Releases and Revisions*, can either be placed in the main left navigation panel or placed in the red top navigation bar.



Consider adding list of delays & changes to calendar

To be fully compliant with Eurostat expectations the website should contain information on delays to the publication schedule. It would therefore be recommendable to add such a headline under a re-worked headline.

3. Conclusions and recommendations

Based on the discussions during the activity the following conclusions appear:

- Armstat.am is organized by products / type of information – should be by subject
- No direct EU requirements –Derived from CoP & QAF ✓
- Staff vision for changes reflects best practices
- Armstat.am can be reorganized
- IT platform behind www.armstat.am – is burning
- New hardware and software need to implement best practices
- PX-Web – www.armstatbank.am should be updated
- Work on updating [www.armstatbank](http://www.armstatbank.am) has already started
- A number of short term improvements to armstat.am has be suggested

Based on the conclusions reached during the activity the NSSRA is recommended to initiate the actions described in the table below.

The next mission on improvement of the websites will take place on 17-20 January 2017.

Action	Deadline	Responsible person
Make a self evaluation of www.armstat.am according to CoP and QAF – using template in Annex 4		NSSRA
Consider adding a list of revisions and delays to publications	To be implemented from January 12017	NSSRA
Decide on user satisfaction survey on website		NSSRA
Simplify armstat.am Sort cards – make a paper mode	End of December 2016	NSSRA
Evaluate and discuss suggestions for short term changes to armstat.am		NSSRA
Implement simplified armstat.am	January – April 2017	NSSRA – Mainly IT to be initiated during follow up mission scheduled for January 2017
Upgrade armstatbank.am to PX-Web December 2015 edition	Has started – September 2016	NSSRA
Plan for adding more data –	November 2016	NSSRA - Dissemination not IT

focus on gender, percentages and regional		
Add most sought after data to implement map and visualizations	December 2016	NSSRA - Dissemination and IT
Identify all missing data – map the total production of NSSRA to the content of armstat.am	March 2017	NSSRA
Add all missing data	End of 2017	NSSRA – Remember to include subject matter divisions

Annex 1: Terms of Reference

<p style="text-align: center;">Terms of Reference</p> <p style="text-align: center;">EU Twinning Project AM/14/ENP/ST/15</p> <p style="text-align: center;">30 August – 2 September 2016</p>

Component 1: Statistical Information Dissemination System

Activity 1.5: Website improvement I

0. Mandatory results and benchmarks for the component

Mandatory results:

- Statistical Information Dissemination System improved (July 2017)

Benchmarks:

- Statistical Information Dissemination System in place (July 2017)
- Statistical Information Dissemination System Strategy paper developed and adopted by the State Council on Statistics (July 2017)
- User satisfaction survey questionnaire updated, tested and published at the NSSRA website (July 2017)
- Staff of NSSRA trained on issues related to the Statistical Information Dissemination (July 2017)

1. Purpose of the activity

- Discussion on how to improve the website to increase user-friendliness and usability
- Evaluation of current web platform in terms of potential for improvement within the project

2. Expected output of the activity

- Recommendation for improvement of website
- A lining up of work programme for the next activity (1.6 is scheduled to 17-20 January 2017)

Annex 2. Programme for the mission

Time	Place	Event	Purpose / detail
Tuesday, noon (30/8)	NSSRA	Meeting with RTA	To discuss the programme of the week
Tuesday, afternoon (30/8)	NSSRA	Meeting with BC Component Leader and BC Experts	Assessment of the current situation and presentation by BC of the expected outcome of current mission
Wednesday, morning (31/8)	NSSRA	Meeting with BC Component Leader and BC Experts	Discussion on how to improve the website to increase user-friendliness and usability
Wednesday, afternoon (31/8)	NSSRA	Meeting with BC Component Leader and BC Experts	Evaluation of current web platform in terms of potential for improvement within the project
Thursday, morning (1/9)	NSSRA	Meeting with BC Component Leader and BC Experts	Continued discussions on how to improve the website to increase user-friendliness and usability
Thursday, afternoon (1/9)	NSSRA	Meeting with BC Component Leader and BC Experts	Preparation of final conclusions, road map and Mission Report
Friday, morning (2/9)	NSSRA	Meeting with BC Component Leader	Presentation of MS Experts' findings and agreement on the reached conclusions
		Ad-hoc meetings	Final clarifications with BC Experts, preparation of report and presentation for BC Project Leader
Friday, afternoon (2/9)	NSSRA	Debriefing with BC Project Leader	Conclusions and decisions and their consequences for the next activity and the implied work programme for BC Experts

Annex 3: Persons met

NSSRA:

Component leaders

- Mr. Stepan Mnatsakanyan
- Ms. Anahit Safyan
- Mr. Vanush Davtyan
- Ms. Narine Musheghyan

Other staff

- Ms. Silva Ulubabyan
- Ms. Nelly Margaryan
- Ms. Gohar Nshanyan
- Ms. Alina Hunanyan
- Mrs. Amine Martikyan
- Mrs. Lilit Karapetyan
- Ms. Aida Martirosyan
- Ms. Armenuhi Arushanyan
- Ms. Sona Shakhgeldyan

RTA Team:

- Peter Bohnstedt Anan Hansen, Resident Twinning Adviser
- Anush Poghosyan, RTA Language Assistant

Annex 4: Selected principles and Indicators from Code of Practice

Selected principles and Indicators from Code of Practice with relevance for evaluation of Armenian web site and other electronic dissemination

CoP principle	NSSRA - compliance	Suggestions for improvements
Principle 6. Impartiality and objectivity		
Errors discovered in published statistics are corrected at the earliest possible date and publicised		
Information on the methods and procedures used is publicly available		
Statistical release dates and times are pre-announced		
All users have equal access to statistical releases at the same time. Any privileged pre-release access to any outside user is limited, controlled and publicised. In the event that leaks occur, pre-release arrangements should be revised so as to ensure impartiality.		
Principle 11: Relevance		
Processes are in place to consult users, monitor the relevance and utility of existing statistics in meeting their needs, and advise on their emerging needs and priorities		
Priority needs are being met and reflected in the work programme		
Principle 13: Timeliness and Punctuality		
Timeliness meets European and other international release standards		
Timeliness meets European and other international release standards		
A standard daily time for the release of statistics is made public		
Divergence from the dissemination time schedule is publicized in advance, explained and a new release date set		
Principle 15: Accessibility and Clarity		
Statistics and the corresponding metadata are presented, and archived, in a form that facilitates proper interpretation and meaningful comparisons		
Dissemination services use modern information and communication technology and, if appropriate, traditional hard copy		

Metadata are documented according to standardised metadata systems		
Users are kept informed about the quality of statistical outputs with respect to the quality criteria for European Statistics		