

# **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 1.6: Website improvement II**

Mission carried out by

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Final version



National Statistical Service  
Republic of Armenia



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## 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
SVG	Scalable vector graphics

## 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 eighth 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.

The activities were a follow up on the work done during activity 1.5 “Website Improvement I” on 30 August – 2 September 2016 by this expert. Since September, the NSSRA staff had carried out the work planned and recommended during activity 1.5. The NSSRA had compiled a clear list of expectations and issues they need to discuss as a supplement to the ToR. Generally all issues were discussed and the NSSRA accomplished some very significant technical breaks during the mission. It is important to recognize and praise the technical competence of the NSSRA IT staff.

## 2. Assessment and results

As mentioned the NSSRA had prepared a list of issues that they need to discuss. Together with these discussions, the NSSRA staff and I did some practical work on both [www.armstat.am](http://www.armstat.am) and on [www.armstatbank.am](http://www.armstatbank.am).

### 2.1 Work done on armstatbank.am

The IT staff running the system raised a number of issues and questions about the [www.armstatbank.am](http://www.armstatbank.am). During activity 1.5 the PX-Web software was updated to the latest available version. In the first part of 2017, a new version of the PX-Web software is expected to be released by Statistics Sweden which is the main developer of the PX-Web software. It is recommended that NSSRA updates the PX-Web software as it becomes available.

#### Order of tables

The NSSRA was advised that presenting the tables inside each subject area according to the MATRIX keyword will ensure that the tables are presented in the same order both in Armenian and in English-sorting by title.

#### Short link

A modification to the Armenian PX-Web version was made to include short links – to tables. The modification makes it possible to write a link to specific table as [www.armstatbank.am/tablename](http://www.armstatbank.am/tablename) - As table name the system uses the value of the key MATRIX. Short link will always direct users to the Armenian language version of armstatbank.am

#### PX-Map

During one of the other activities in the component, it was recommended to add the PX-Map component to Armstatbank.am. PX-Map is part of the PX family. However adapting the PX-Map software to use in Armenia is proving time consuming and cumbersome. There are 3 main challenges – the first

problem is installing the PX-Map software on the [www.armstatbank.am](http://www.armstatbank.am) server. The second is sourcing a suitable SVG map of Armenia and the relevant administrative units (regions / marzes) and finally there is a lack of data in armstatbank.am, which has the relevant geographical break down. Time allowing I will do some more tests / work before the wrap up activity currently planned for June 2017 – however at the moment I do not know how much time that can be allocated to this – nor if it will be successful.

## 2.2 Work done on armstat.am

On request of the NSSRA, the work on [www.armstat.am](http://www.armstat.am) addressed the following issues:

- Improvement of website
- Restructuring of homepage
- Assessment of current web platform for the improvement of the website
- Introducing the website information by topics
- Updating time series of main macroeconomic indicators and creating interactive graphics and maps
- Creating interactive communication system for users

All issues were addressed, although they were discussed in less structured way. Below you will find a short description of the most important issues.

### 2.2.1 Preparation of new navigational structure (Improving and restructuring)

As agreed during activity 1.5, the NSSRA staff had prepared a suggestion for a new navigation structure to be introduced on [www.armstat.am](http://www.armstat.am). The main purpose of introducing a new navigation structure is that the present navigational architecture is crowded and some headlines are overlapping and thereby the navigational hierarchy /tree appears inconsistent and confusing to users. The navigational tree has been allowed to grow in an unstructured way – and in many ways, this is how NSI websites develop- items are added as they are prepared and new and important headlines are added as political or organizational needs dictates –but from time to time is necessary to step back and simplify the navigational tree.

The process and suggestions for how to define a new navigational tree was introduced in September and the NSSRA staff presented the result of this work - a few issues were still open and were discussed during this activity.

My impression is that the suggested structure is a major improvement compared to the old one. It will make it easier for the users to locate the information they are actually looking for. It is very important that the NSSRA use this opportunity to carefully consider each piece of information found on the website. Is the information useful for many users? Or for important user groups? Information that does not fit with these criteria should be moved as far away from the front page as possible. Headlines should be few and clear and preferably comparable to the structure used by other NSI's.

### 2.2.2 Proposal for a new front page to armstat.am

The NSSRA had also prepared a proposal for how a revised front page could look. The proposal should be seen as a kind of minimum proposal for easily adapted changes to [www.armstat.am](http://www.armstat.am). Done in isolation and without the proposed changes to the navigation structure these changes will still make a very significant improvement of [www.armstat.am](http://www.armstat.am)

The issues with the front page are described in some detail in the report from activity 1.5 but some of the main issues are repeated below.

**Search field nearly hidden**

Users expect to find search field in top of the page and not and to the right and below the navigation tree. This can easily be corrected and is part of the proposal.

**Crowded and irrelevant content**

The current right column holds very much information that is not really needed and is only relevant for very small user groups. All the information found here, is typically found at the third or fourth level of a navigations tree.

Download of zip and acrobat tools are not really related to the product of the NSSRA –and to day these tools are fully integrated in operating systems and browser. It is 10 or more years ago that we had to help our users with such issues. If they for some reasons are still needed, the downloads should be up to date and placed under a help heading. The proposal for a new navigation tree solves this issue – but even without a new navigation structure, this can easily be solved.

In the past there might be good reasons for the content in the lower right corner and the lower left corner – but today in 2017 these bits of information are not really needed my any major user groups and just adds confusions to users navigating the site and make the “look and feel” of the web site lees attractive. Cleaning out these parts will help and improve the web site significantly at no real costs.

**Content belonging to same heading**

Currently there is a number of databases and release calendars – this is confusing and taking up space that can be instead be used for news / content. The proposal made by the NSSRA moves this content into a more logical position and represent the new headings with graphical illustrations.

## 2.2.3 Prototype of revised www.armstat.am

Below is a screen dump of the NSSRA proposal for a new [www.armstat.am](http://www.armstat.am) front page, as it appeared at the end of this activity – Friday January 2017 and together with that an illustration of the current production version of [www.armstat.am](http://www.armstat.am)

### Prototype of reworked armastat.am

### Current armstat.am 20 January 2017

As can be seen from the illustration the NSSRA staff is also contemplating changes to look and feel of the armstat.am website. In due course a radical change and update to the layout is needed. But for the moment the suggested changes will definitely make the site more appealing to users and give it a more contemporary “look and feel”.

I have advised the IT staff to play with the colours and try to find a balance that makes the site appear light but still with enough contrast to be easily readable. The Armenia alphabet is tricky as the letters generally are large and have more details – this creates a number of problems connected with formatting <B> , <I> or <UL> tags . It could be use full to consider using different CSS / styles for Armenia, Russian and English language. If the languages do not have different CSS files already, it can be easily done by scripting.

### Navigation

Currently we do not know how the navigation on the pages beyond the front page can be implemented. The easy solution will be to have the current type left navigation appear on all pages below the front page. However the IT department will make some experiments to decide what’s possible and what’s not possible.

### Current time plan for changing the web site

After discussions with the Director General, a tentative time for putting the suggested new “look and feel”, updated front page and revised navigation structure in place is end of April.

It is recommended that the NSSRA put a notice on the web site informing users that content will be relocated (links and bookmarks users are used to will change) sometime before the changes are made public. To ensure NSSRA visibility issuing a press release is also recommended.

### 2.2.3 Assessment of current web platform for improvement of website

After some discussions and test's it became clear that the NSSRA's proposal for a new front page and a revised navigation structure can be implemented using the current CMS. However in near future the NSSRA will have to introduce navigation by topic, integration between [www.armstat.am](http://www.armstat.am) and [www.armstatbank.am](http://www.armstatbank.am) and modern visualizations and interaction tools. This will clearly NOT be possible using the current CMS. In the report from activity 1.5, this is described as shifting the website from a product to a subject oriented web site. The shift from product to subject oriented is happening or has already happened at the European NSI's.

#### Software

The increased use of mobile telephones and iPad type devices for browsing is creating a need for responsive web design – this cannot be implemented inside the current CMS. Introducing graphics and interactions requires the CMS to be able to “render” data taken from API's this is also not possible. The short conclusion is that in 1 to 2 years a new CMS is needed. Changing the CMS will also require new hardware. The IT staff will also need access to a test and development environment running the same software versions. The test and development environment should include deployment features and include version control. The current test environment running on win 2000 is better than nothing – but WIN 2000 is seriously outdated – the same can be said of the WIN 2008 Server that is running the production version.

In short the present hardware and software will take the NSSRA through the update of [www.armstat.am](http://www.armstat.am) that has been planned during this autumn and winter and that will be implemented in the spring – but it will not be so perspective for NSSRA either – something completely new is needed both in terms of hardware and software.

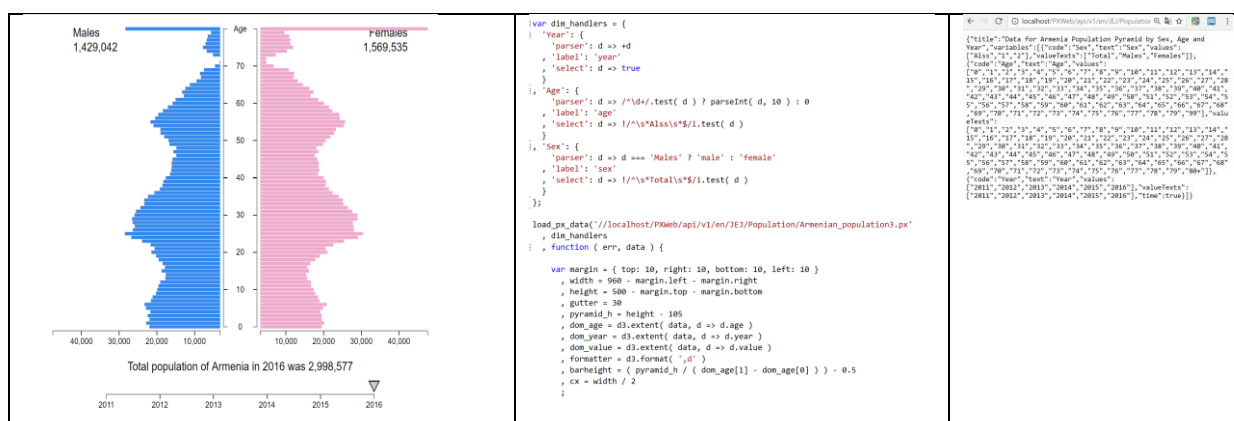
### 2.2.4 Discussion on visualizations

Together with the NSSRA staff I had some initial discussions regarding visualization of data on the [www.armstat.am](http://www.armstat.am) website. The timeframe of the activity did not allow for a detailed discussion of this topic. In general, the way forward for the NSSRA in this field is to use a combination of open source tools for visualization combined with the data in the Json-Stat format drawn from [www.armstatbank.am](http://www.armstatbank.am) using the API of the PX-Web solutions. Using these approach assumes that the NSSRA staff has a good understanding of Java-Script, Json, and Json-Stat.

It is important to note that these competencies are paramount for the future work in dissemination and the work on exchanging (administrative) data with other agencies. The NSSRA management must therefore encourage the staff to learn these skills and allow them sufficient working time to experiment and develop these skills in practice.

The illustration below shows a dynamic population pyramid based on Armenian Census data, the rendering script and the Json-Stat file coming from the PX-WEB API.





## 2.2.5 Creating interactive communication system for users

The possibilities for introducing some kind of interactive communication system for users were discussed during the activity. The NSSRA has a vision or wish to introduce some kind of system for on-line dialogue with users. It was not possible to identify any suitable software solutions for this – but it is clearly recommendable that the NSSRA discusses the resources needed to answer and interact in real time before starting down this road. Any solution for this must also be able to be turned “on and off” outside office hours. A less ambitious goal could be to simply introduce a web form for user wanting to ask questions to the NSSRA. The questionnaire form should be placed under the new HELP heading.

## 2.2.6 Creating awareness about user satisfaction survey

The IT staff have prepared a pop up window asking users to fill in the user satisfaction questionnaire. The popup reminder has not yet been put into production. It is recommended that the pop up is extended so that users can say no to the questionnaire or ask to be reminded at a later time. Not to alienate users it is important that the pop up is not shown every time a user enters [www.armstat.am](http://www.armstat.am). There are many possibilities for complicating and further developing such pop ups – but it is recommended that it is kept as simple as possible.

## 3. Conclusions and recommendations

The conclusions and recommendations for this activity are given according to platform. All recommendations from activity 1.5 that are not yet implemented are still relevant and should still be considered.

### 3.1 Conclusions and recommendations on [www.armstat.am](http://www.armstat.am)

The work done since the last activity has proven very useful and has happened according to the schedule outline in the report from 1.5. The NSSRA should therefore launch the new navigational structure and the reworked front page of [www.armstat.am](http://www.armstat.am) as soon as possible. Compared to some absolute ideal or perfect state defined as new website in responsive design with a subject based navigation structure – the NSSRA has a very long way to go.

Given the constraints made by the current obsolete CMS the planned changes will give a very significant improvement for the users. It is important that the update process is carried out as soon as possible – but external and internal stakeholders must be informed about the process. It is recommended that a press release notification for users is issued a week or two in advance.

The technical platform behind [www.armstat.am](http://www.armstat.am) WAS innovative and cutting edge when it was put in place. However today IS clearly NO longer sustainable and it will need replacement in the short term

future. It is therefore extremely important that the NSSRA management prioritize such a replacement in any future corporation projects.

### 3.2 Conclusions and recommendations on [www.armstatbank.am](http://www.armstatbank.am)

Compared to the work program defined by the NSSRA more results could have been achieved. The work on deploying PX-WEB and to source a suitable map of Armenia is still pending and I will try to put some work on both problems in the coming weeks- however, it may take some time and immediate success is not ensured.

Adding data with a regional and gender break down to [www.armstatbank.am](http://www.armstatbank.am) should still be prioritized as stated in the mission report from activity 1.5 from September 2016. Even if the map facilities had been put in place, there would still be a noticeable lack of data suitable for visualization on maps or as interactive graphics.

The NSSRA staff should build skills and competences in the use of Java-Script and the associated data manipulation tools in order to take full advantage of the [www.armstatbank.am](http://www.armstatbank.am) / PX-WEB API. These competences are also highly relevant for any projects on exchange of (administrative) data that the NSSRA may be engaged in.

Action	Deadline	Responsible person
Put user satisfaction reminder in to production	As soon as possible	NSSRA – IT staff
Get Management approval for new navigation structure of <a href="http://www.armstat.am">www.armstat.am</a>	In principle approved by Director General at debriefing January 20 –	NSSRA – All
Present new navigation structure to Head of Divisions / relevant staff		NSSRA – IT staff and Dissemination / Communication staff
Implement new front page of <a href="http://www.armstat.am">www.armstat.am</a>	In principle approved by Director General at debriefing January 20 – Decide on launch day	NSSRA – IT staff
Implement new navigation structure of <a href="http://www.armstat.am">www.armstat.am</a>	Test indicates that this is possible – but be prepared that unforeseen technical problems may appear	NSSRA – IT staff
Prepare press release – inform users that the website is about to change	About a week before changing navigation structure and look and feel of front page.	NSSRA – Dissemination / Communication staff
Consider using pop up add on web site	Use a pop up add on the web site to inform users that the structure will changes -	NSSRA – Dissemination / Communication / IT
Under HELP heading –inform about what has changed	Place a document on the web-site explaining that content has changed and remember users that they can contact NSSRA staff to get further information /	NSSRA – Dissemination / Communication / IT

	help	
Study how to extract and integrate data from Armstatbank.am API using Java-Script technologies – Examples are available in Annex 4.	August 2017 – or preferably before June 2017	NSSRA – IT staff
Prepare suggestions / questions for visualizations from <a href="http://www.armstatbank.am">www.armstatbank.am</a> to be briefly discussed during the last mission in June 2017	No later than end of April 2017- if the suggestions are to be discussed during the last activity in early June 2017.	NSSRA – IT staff
Include continued web / dissemination work in upcoming project with World Bank or other relevant donor	End of June 2017	NSSRA – Management / International relations staff
Adopt and align future corporation project with recommendations from the activities in the Twinning projects component I	During last part of Twinning project – Second part of 2017	NSSRA – Management / International relations staff
Replace CMS and all hardware behind <a href="http://www.armstatbank.am">www.armstatbank.am</a>	End of 2018	NSSRA – Management decision
Replace look and feel of armstat.am with new responsive web design using a subject oriented navigation structure	End of 2018	NSSRA – IT Staff

## **Annex 1: Terms of Reference**

<p style="text-align: center;"><b>Terms of Reference</b></p> <p style="text-align: center;"><b>EU Twinning Project AM/14/ENP/ST/15</b></p> <p style="text-align: center;"><b>17-20 January 2017</b></p>
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### **Component 1: Statistical Information Dissemination System**

#### **Activity 1.6: Website improvement II**

#### **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**

- Follow-up on recommendations and homework on last mission
- Discussion on how to improve the website to increase user-friendliness and usability
- Improvement of PC-Axis and Armstatbank.am

#### **2. Expected output of the activity**

- Recommendations for improvement of website
- Finalizing technical aspects of User Satisfaction Survey on Armstat.am
- A lining up of work programme for the end of the project and for the future

### 3. Participants

#### **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

#### **MS expert**

Mr. Jesper Ellemose Jensen, Expert, Statistics Denmark

## Annex 2. Programme for the mission

<b>Time</b>	<b>Place</b>	<b>Event</b>	<b>Purpose / detail</b>
Tuesday, noon (17/1)	NSSRA	Meeting with RTA	To discuss the programme of the week
Tuesday, afternoon (17/1)	NSSRA	Meeting with BC Component Leader and BC Experts	Assessment of situation and presentation by BC of the work conducted since last mission.  Presentation by BC of the expected outcome of current mission.
Wednesday, morning (18/1)	NSSRA	Meeting with BC Component Leader and BC Experts	Discussion on how to improve the website to increase user-friendliness and usability; assessment of the current web platform; changing the structure of the home page
Wednesday, afternoon (18/1)	NSSRA	Meeting with BC Component Leader and BC Experts	Working discussion on how to improve the website armstatbank.am within the frames of the project
Thursday, morning (19/1)	NSSRA	Meeting with BC Component Leader and BC Experts	Continued work aimed at improving the websites
Thursday, afternoon (19/1)	NSSRA	Meeting with BC Component Leader and BC Experts	Preparation of final conclusions, road map and Mission Report
Friday, morning (20/1)	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 (20/1)	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
- Mr. Vanush Davtyan
- Ms. Narine Musheghyan

#### Other staff

- Ms. Aida Martirosyan
- Ms. Armenuhi Arushanyan
- Ms. Sona Shakhgeldyan

### **RTA Team:**

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

## Annex 4: Suggestions for visualizations

Below are some suggestions for visualizations using various Java-Script dialects that can be combined with data from [www.armstatbank.am](http://www.armstatbank.am) using the API and JSON-stat.

The main reference of examples for this methodology is <https://github.com/badosa/JSON-stat/wiki/Examples>

### Web publication using PX-Web database

Interactive presentation of the country in various statistical tables

This presentation using PX-Web API and open source visualization tools is prepared by the statistical office of the Faroes Islands.



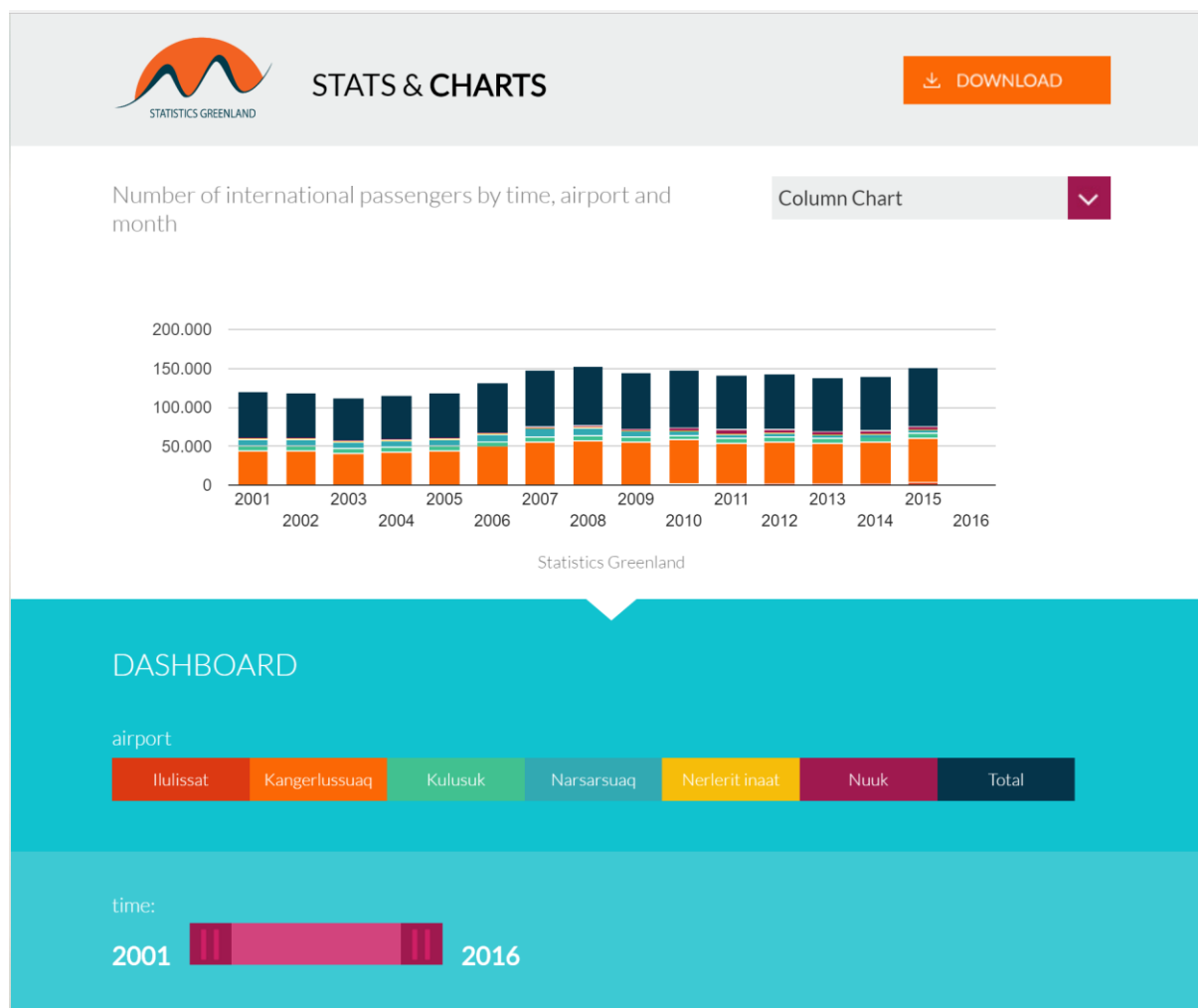
Original demo <https://hagstovan.github.io/gluggin/>

Software available from

- <https://github.com/hakimel/reveal.js/>
- <http://www.highcharts.com/>
- <https://json-stat.org/>



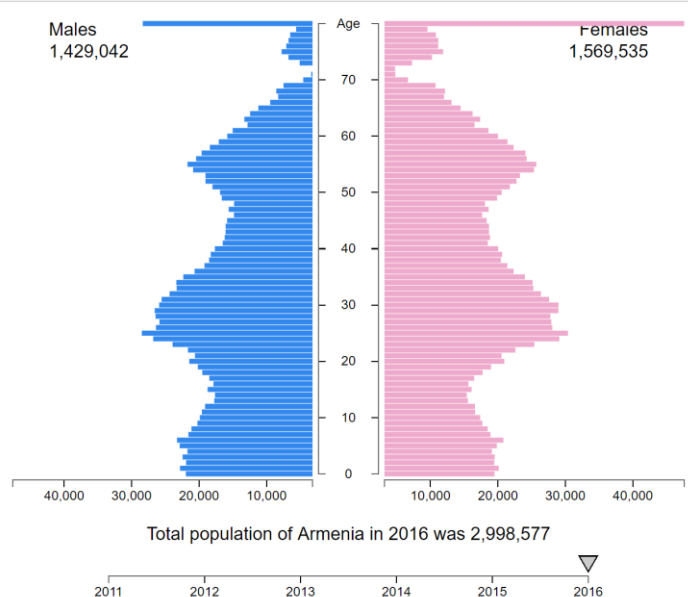
## Statistics Greenland Dash Board



Software available from Git

<https://github.com/StatisticsGreenland/statbank2charts>

## Population Pyramid using Armenian population data



Adapted example – originally developed by user using data from Statistics Iceland's PX-WEB API  
Source and explanations available from <https://bl.ocks.org/borgar/b952bb581923c9993d68>