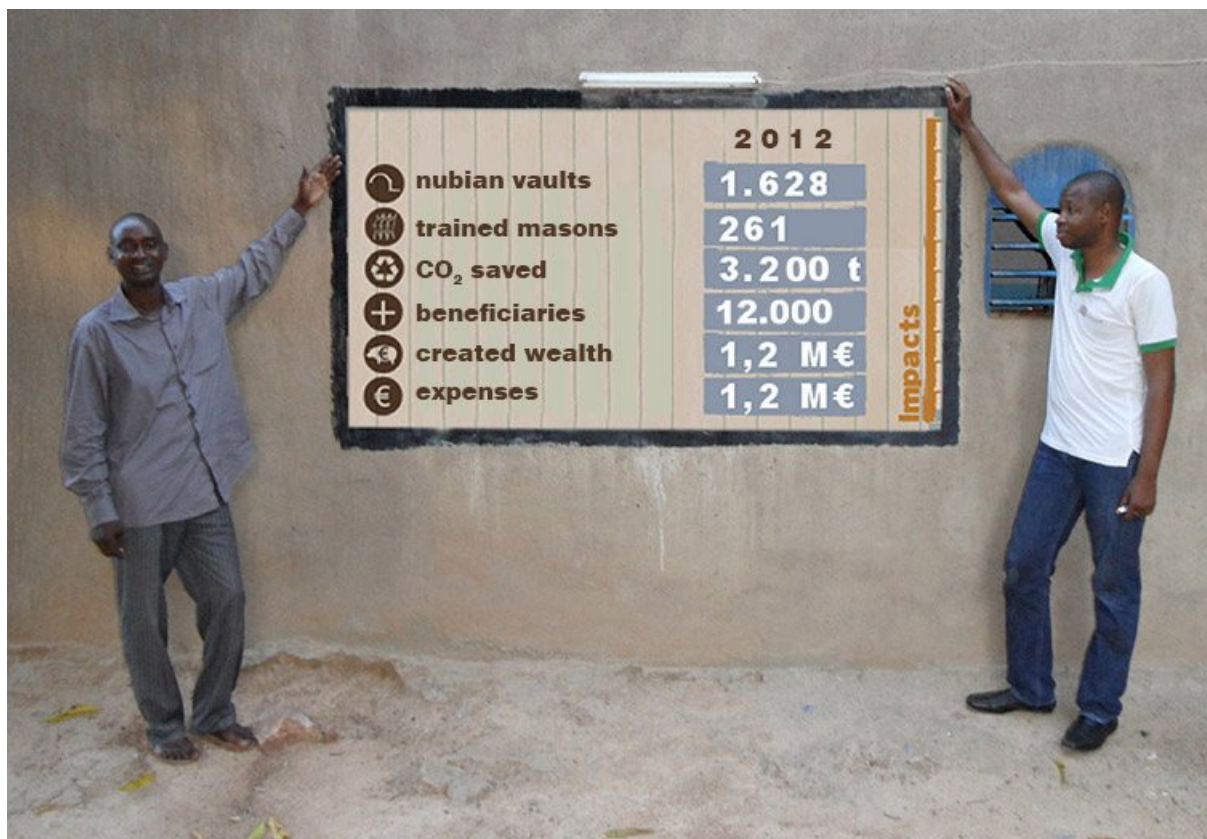


## MONITORING, EVALUATION AND IMPACTS



## KEY FIGURES & TABLES WITH GENERATED IMPACTS 2011-2012

<b>KEY FIGURES (October 2012)</b>	<b>2</b>
<b>TABLES with GENERATED IMPACTS</b>	<b>8</b>
1. Dashboard – Global Impacts	8
2. Production and training in West Africa	10
3. Dashboard – Impacts BURKINA-FASO	12
4. Dashboard – Impacts MALI	13
5. Dashboard – Impacts SENEGAL	14

## KEY FIGURES (October 2012)

**12**

**The Association La Voûte Nubienne (AVN) is 12 years old**  
 (founded in 2000)

**3 + 2**

**AVN is active in 5 countries:** <sup>1</sup>

**- established in 3 West-African countries:**

Burkina-Faso, Mali, Senegal

**- in test phase in 2 other West-African countries:**

Mauritania, Benin (2011-2012)

**4+4**

**This number represents the duplication of active local regions.**  
**In June 2013, AVN should have offices in 8 regions in West-Africa.**

- 4 offices are operational: Boromo, and Koubri in Burkina Faso; Ségou in Mali; Podor in Senegal
- 4 offices are in start-up phase (recruitment, training, construction and Installation of offices) : Yako and Dédougou in Burkina-Faso , Koutiala and Dioila in Mali

**306**

**Number of different places where Nubian Vaults have been built.**  
 (settlements, villages, towns)

**12 km**

**If all the vaults built since the start of the program were placed end-to-end, this would reach a total length of 12 km.**

As the width of the vault is generally standard (3,25m), the usable space created per metre is 3,25m<sup>2</sup>. This means ~ 4 hectares of total usable living space created.

**34 %**

**The average annual growth rate, measured in metres of construction since the start of the program.**

In 1999-2000 72 linear metres of vaults were built, compared to 2 399 metres in 2011-2012

<sup>1</sup> AVN decided not to invest in the development in southern Africa for the next 3 seasons, in order to focus more efficiently on the program in West-Africa

## 707 **Number of Nubian Vault (NV) construction sites since the beginning of the program, representing 1628 vaults.**

A construction site may include several NV's, for different types of building (houses, barns, community buildings, mosques....); in general, the number of construction sites = the number of NV clients.

## 261 **Is the number of NV masons, foremen and entrepreneurs trained since the start of the program.**

214 of them work regularly with 82 % of their time dedicated to NV construction. The money they earn benefits their families directly; 1300 people profit each year from The economy generated by the NV market.

It is estimated that an NVmason supports 4 other family members.



## ~ 300 **The number of NV apprentices in training.**

## ~ 12,000 **The number of people that use or live in a Nubian Vault is equivalent to the population of a small rural town in Burkina Faso, such as Boromo**

It is estimated that 3,2 persons benefit per private vault (house) and that 17 persons benefit per vault built for community use. 70 % of the m<sup>2</sup> built are private and 30 % are communal.



2 The calculation to find the number of beneficiaries has been refined in September 2012.

**58 %**

**Of NV clients in 2011-2012 58% are subsistence farmers (68% in 2010-2011)**

75 % of NV clients in 2011-2012 are type T1-T2 :  
 (farmers, small shopkeepers, civil servants...)



**60**

**The number of local 'champions', who communicate AVN's message in villages in West Africa**



The champions are convinced of the benefits of the Nubian Vault technique and have credibility amongst their local population.

They are promoting the Nubian Vault concept in their villages, thus helping develop the market for NV housing and construction.

**35 %**

**Today, 35 % of the NV market is completely autonomous.**  
 (direct contact between client and NV mason)

Of 174 construction projects in 2011-2012, 61 were effected without any intervention by AVN.

**~ 2,200**

**The number of trees saved due to NV construction**

It is estimated that 4 trees are needed to construct a medium size house with a wood + earth or thatched roof. 34 % of the NV-buildings would have been built using these methods if they had not been based on the NV technique.

- ~ 19,000 The number of unused iron roofing sheets**  
 One earth + iron sheet house (26 m<sup>2</sup>) needs 18 iron sheets; it is estimated that 65 % of the NV buildings would have used iron sheet roofing, if the NV technique had not been adopted.
- ~ 3,200 The estimated number of tonnes of CO<sub>2</sub>-equivalent saved**  
 Following an independent expert assessment carried out by ERM (www.erm.com) in London, we can assume that a standard NV of 25 m<sup>2</sup> floor space makes a saving of 2,0 tonnes of CO<sub>2</sub>-equivalents (CO<sub>2</sub>e) compared to the available alternative construction methods.
- ~ 1,2 M€ Local economic impact generated by the construction of Nubian Vaults, either through formal exchange (exchange of money), or through informal exchange (service, self-construction), since the start of the program (of which 240,000 € was generated in 2011-2012)<sup>3</sup>**  
 A medium size house generates the equivalent of 350,000 FCFA to 1,000,000 FCFA of local economy for the construction only (unskilled labour, skilled labour, materials and transport, rendering, ... ), according to country, classification of client, construction sector (rural, urban)
- ~ 1,2 M€ The cost of the program from 1999 till 2012.**  
 The cost of the program in 2011-2012 has increased to 300,000 €.
- 10 The number of women actively engaged in the AVN program**  
 2 employees in France, 3 employees in Burkina-Faso, 1 expatriate volunteer, 4 local 'champions'.  
 In the rural areas, women are the principal actors in the formal economy, due to the crafts industry, small entrepreneurial activities, and through selling products produced on their small-scale farms. Through this work they make monetary resources available to the family, even more so than their husbands. In these families, the husband and wife usually manage their own cash. Often the investments to improve the home come from the wife's savings.

<sup>3</sup> To improve the importance of the different markets (country, classification of clients, construction sector), the calculation of the generated economy by the program is refined in September 2012.

The group women/children (a group that is difficult to split in the daily life of African populations) is the primary user of the house and the courtyard. Choosing the Nubian Vault, this group is thus the first to benefit from the improved levels of comfort.

During the dry season, the construction of a Nubian Vault means physical work for the client – the husband, his sons, his neighbours – and the masons. They work together with the common interest of the family, and in the first place for the women and children.

Finally, because the Nubian Vaults cost little to maintain, the investment in a NV house reduces later pressure on the household finances, making money available for health, education, or household equipment. This allows improvements in the day-to-day life of the family, but more specifically the women and children.

It is therefore legitimate to consider women and children as the primary beneficiaries of the Nubian Vaults (~ 9 200 persons since the start of the program).<sup>4</sup> Their involvement in the Nubian Vault program is real and essential: the women get together to convince their sisters and husbands of the benefits of the Nubian Vaults.

The pro-active implication of women at AVN is a strong objective. Their presence and responsibilities at the office will be reinforced in the coming season. As the work of extension agents can be particularly tough (driving motorbikes, dust, multiple day missions, ... ) it is difficult to increase their presence in the field. Nevertheless 1/3 of the missions in 2012-2013 should have a female component (meetings and promotional activities aimed at women and female associations)













*Front page image:*

*Boubacar OUILY, national coordinator of AVN-Burkina Faso and Ismaïla DIALLO, national coordinator of AVN-Mali present the generated impacts by the AVN program les generated impacts of the AVN-program from 1999 to 2012.*

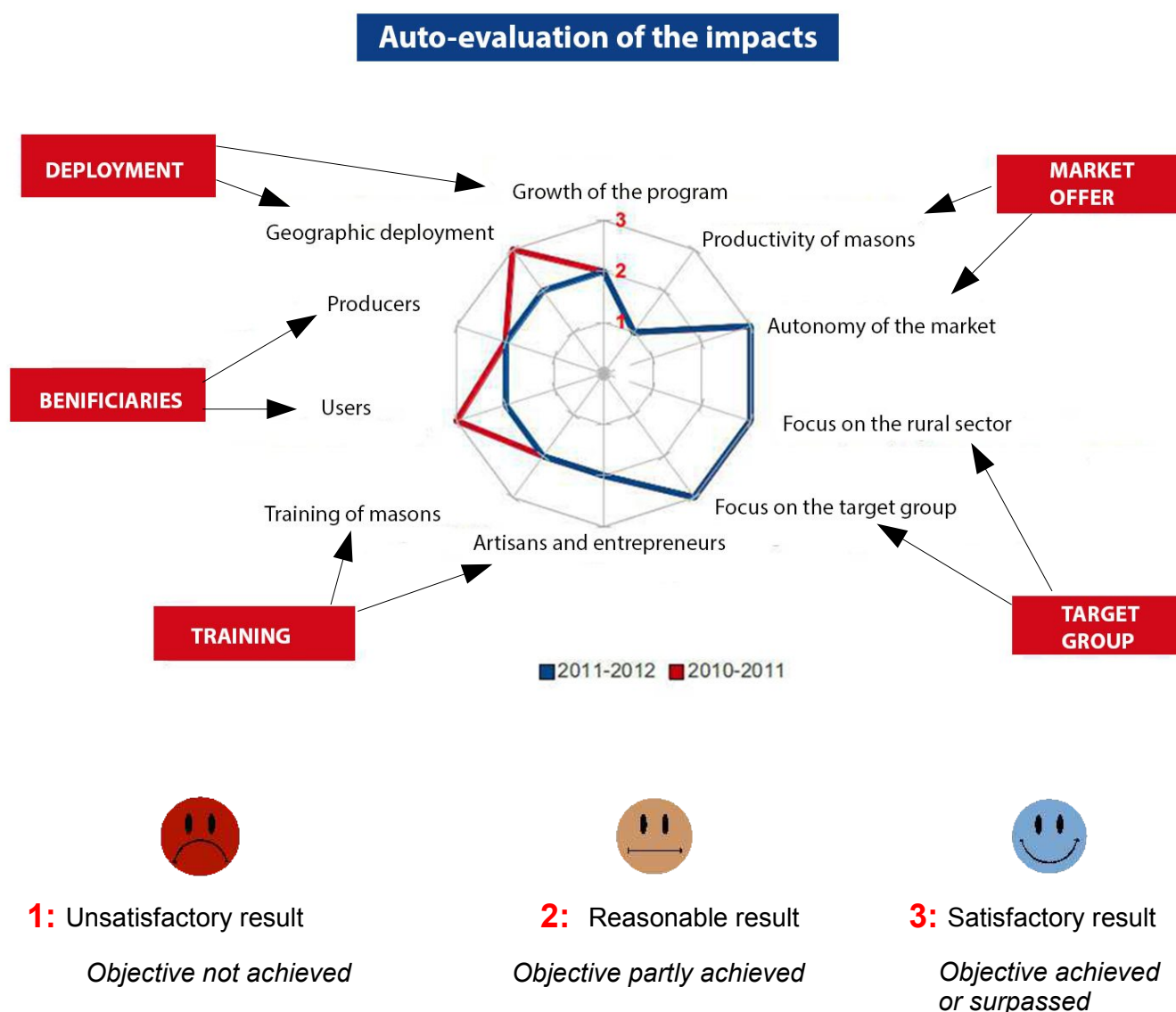
<sup>4</sup> In Burkina Faso and Mali 54 % of the population is less than 18 years old. (Recensement Général de la Population et de l'Habitation, Burkina Faso 2006 et Mali 2009)

# TABLES with GENERATED IMPACTS

## 1. DASHBOARD - GLOBAL IMPACTS

N°	INDICATORS	Results and objectives 2011-2012	Growth (%)	Results 2010-2011	rating
1	<b>GROWTH OF THE PROGRAM</b>				
	Average annual growth in linear metres	<b>34 %</b> target : $\geq 35 \%$	-2 %	36%	
2	<b>GEOGRAPHIC DEPLOYMENT</b>				
	Number of localities reached	<b>306 localities</b> target : 320	+ 25 %	244 places	
3	<b>BENEFICIARIES - PRODUCERS</b>				
	Amount in linear metres	<b>2 399 m</b> target : 2 850 m cumul : 12,1 km	+ 10 %	2 184 m	
4	<b>BENEFICIARIES - USER</b>				
	Number of projects (number of clients)	<b>174 projects</b> target : 195 projects cumul : 707 projects	+ 16 %	150 projects	
5	<b>TRAINING OF MASONS</b>				
	Number of trained masons C3 - C4 - C5	<b>47 new masons</b> cumul : 261 masons target: 280 masons	+ 22 %	cumul : 214 masons	
6	<b>ARTISANS AND ENTREPRENEURS</b>				
	Qualification note (1 C4 = 1 point ; 1 C5 = 2 points)	<b>130 points</b> target: 140 points	+ 20 %	108 points	
7	<b>PRODUCTIVITY OF MASONS</b>				
	Average amount of m <sup>2</sup> Nubian Vault per chief mason per season	<b>94 m<sup>2</sup></b> target: 130 m <sup>2</sup>	-6 %	100 m <sup>2</sup>	
8	<b>FOCUS OF THE PROGRAM ON THE TARGET GROUP</b>				
	Portion of clients type 1 and type 2 (number of projects)	<b>75%</b> target: $\geq 75 \%$	- 5 %	80%	
9	<b>FOCUS OF THE PROGRAM ON THE RURAL AND SEMI-URBAIN SECTOR</b>				
	% of linear metres in sector 1 and 2A	<b>91%</b> target: $\geq 75 \%$	+22 %	69%	
10	<b>AUTONOMY OF THE MARKET</b>				
	% of projects with a direct relation between client and mason (no intervention of AVN)	<b>35 %</b> target: $\geq 30 \%$	- 2 %	37 %	

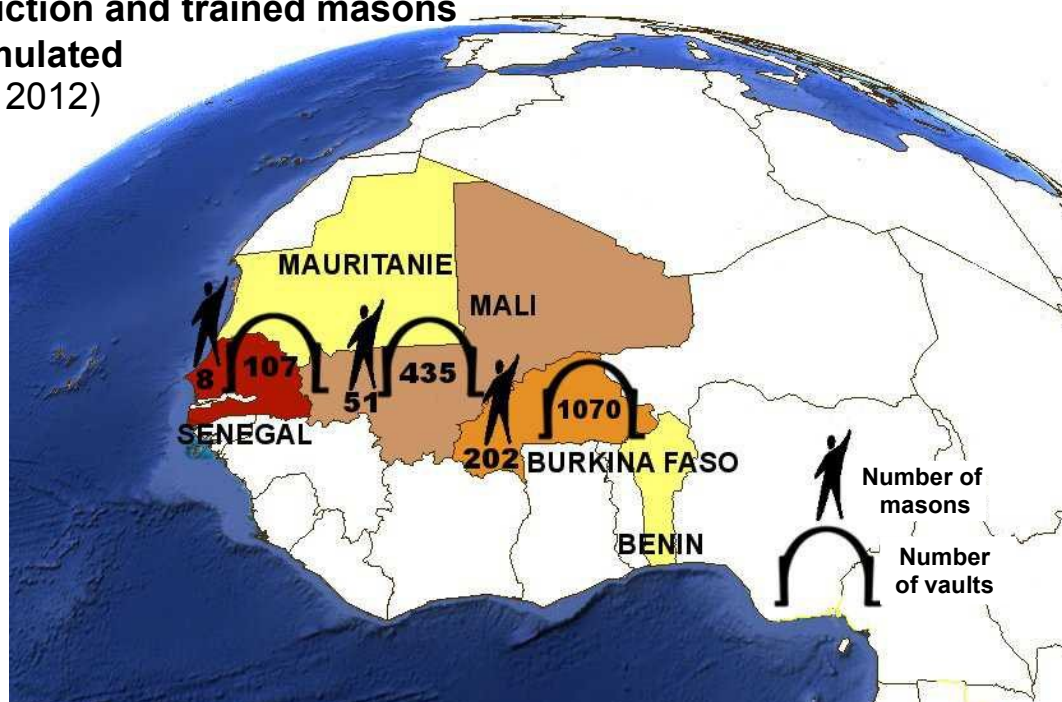
This 'radar' diagram shows an overview of the results. The 10 indicators are positioned at the perimeters of the radar. The indicators are rated a number from 1 to 3. The bigger the zone described by the line, the more satisfactory the results.



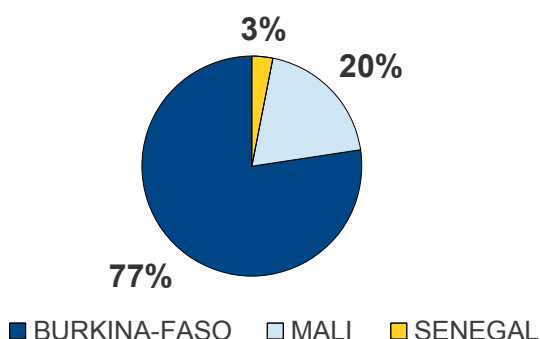
## 2. Production and training in West Africa

The program started in Burkina Faso, in 2000. In 2006 it spread to Mali and from 2007 to Senegal. This quick development has been made possible by the great flexibility and mobility of the Nubian Vault builders in West-Africa. At the moment, most NV masons are Burkinabe, but the training of Malian masons - primarily 'rural' masons - is growing fast. The demand for the Nubian Vault technique remains most important in Burkina Faso (62% this season) followed by Mali (25%) and the other West African countries (13%).

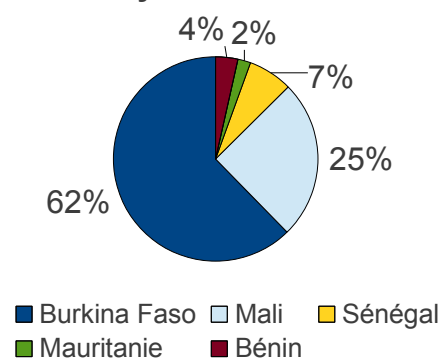
### Production and trained masons accumulated (June 2012)



VN-Masons per country 2011-2012



Production in linear metres per country 2011-2012



Nubian Vaults can be built for any purpose: housing, offices, churches, mosques, hospitals, hotels, warehouses.

Housing is the most common use for an NV building (82% of all projects in 2011-2012). The simplicity of the Nubian Vault technique permits the rural population to partly self-build their houses, which reduces the monetary investment for skilled NV-masons.

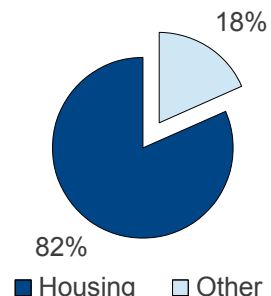
Other types of building that demand a greater technical skill will usually not be self-built (except for mosques which are usually built with the help of the entire religious community).

In other typologies the NV-technique shows its relevance against other types of construction. An example is the double story house, which is more comfortable and cheaper than a similar building of concrete construction.

The following table shows the VN projects per typology/usage in 2011-2012:











### Typology of VN projects

Global, 2011-2012













GLOBAL – Season 2011-2012	BURKINA FASO	MALI	OTHER	TOTAL
Housing	102	31	9	<b>142</b>
Office	2	4	2	<b>8</b>
Hotel	5	0	0	<b>5</b>
House of worship - Mosque	1	4	0	<b>5</b>
Warehouse	1	3	0	<b>4</b>
Workshop/factory	2	0	1	<b>3</b>
Chicken house	1	0	1	<b>2</b>
House of worship - Church	1	0	0	<b>1</b>
Care - health	1	0	0	<b>1</b>
Library	1	0	0	<b>1</b>
Shop	1	0	0	<b>1</b>
Restaurant	1	0	0	<b>1</b>

### 3. DASHBOARD – IMPACTS BURKINA FASO











N°	INDICATORS	Results and objectives 2011-2012	Growth (%)	Results 2011-2012	rating
1	<b>GROWTH OF THE PROGRAM</b>				
	Average annual growth in linear metres	<b>29 %</b> target: $\geq 35 \%$	-1 %	30%	
2	<b>GEOGRAPHIC DEPLOYMENT</b>				
	Number of localities reached	<b>192 localities</b> target: 220	+ 15 %	167 places	
3	<b>BENEFICIARIES - PRODUCERS</b>				
	Amount in linear metres	<b>1 489 m</b> target: 1 625 m cumul : 8 kilo-vault	+ 18 %	1249 m	
4	<b>BENEFICIARIES - USER</b>				
	Number of projects (number of clients)	<b>119 projects</b> target: 130 projects cumul : 524 projects	+ 19 %	100 projects	
5	<b>TRAINING OF MASONS</b>				
	Number of trained masons C3 - C4 - C5	<b>31 new masons (*)</b> cumul : 202 masons target: 220 masons	+ 18 %	cumul : 171 masons	
6	<b>ARTISANS AND ENTREPRENEURS</b>				
	Qualification note (1 C4 = 1 point ; 1 C5 = 2 points)	<b>107 points</b> target: 120 points	+ 15 %	93 points	
7	<b>PRODUCTIVITY OF MASONS</b>				
	Average amount of m <sup>2</sup> Nubian Vault per chief mason per season	<b>94 m<sup>2</sup></b> target: 130 m <sup>2</sup>	-6 %	100 m <sup>2</sup>	
8	<b>FOCUS OF THE PROGRAM ON THE TARGET GROUP</b>				
	Portion of clients type 1 and type 2 (number of projects)	<b>80%</b> target: $\geq 75 \%$	- 9 %	89%	
9	<b>FOCUS OF THE PROGRAM ON THE RURAL AND SEMI-URBAIN SECTOR</b>				
	% of linear metres in sector 1 and 2A	<b>87%</b> target: $\geq 75 \%$	+14%	73%	
10	<b>AUTONOMY OF THE MARKET</b>				
	% of projects with a direct relation between client and mason (no intervention of AVN)	<b>44 %</b> target: $\geq 35 \%$	+3%	41 %	

(\*) Estimated result (Oct 2012) the precise results will be available after the C3 and C4 training sessions in November and December 2012.

## 4. DASHBOARD – IMPACTS MALI

N°	INDICATORS	Results and objectives 2011-2012	Growth (%)	Results 2011-2012	rating
1	<b>GROWTH OF THE PROGRAM</b>				
	Average annual growth in linear metres	<b>23 %</b> target: $\geq 35 \%$	-12 %	35 %	
2	<b>GEOGRAPHIC DEPLOYMENT</b>				
	Number of localities reached	<b>94 localities</b> target: 86	+ 42 %	66 places	
3	<b>BENEFICIARIES - PRODUCERS</b>				
	Amount in linear metres	<b>599,5 m</b> target: 900 m cumul : 3,1 kilo-vault	- 14 %	695 m	
4	<b>BENEFICIARIES - USER</b>				
	Number of projects (number of clients)	<b>42 projects</b> target: 56 projects cumul : 152 projects	- 2 %	43 projects	
5	<b>TRAINING OF MASONS</b>				
	Number of trained masons C3 - C4 - C5	<b>16 new masons</b> cumul : 51 masons target: 46 masons	+ 46 %	cumul 35 masons	
6	<b>ARTISANS AND ENTREPRENEURS</b>				
	Qualification note (1 C4 = 1 point ; 1 C5 = 2 points)	<b>18 points</b> target: 13 points	+ 80 %	10 points	
7	<b>PRODUCTIVITY OF MASONS</b>				
	Average amount of m <sup>2</sup> Nubian Vault per chef mason per season	<b>104 m<sup>2</sup></b> target: $\geq 130 \text{ m}^2$	unknown	unknown	
8	<b>FOCUS OF THE PROGRAM ON THE TARGET GROUP</b>				
	Portion of clients type 1 and type 2 (number of projects)	<b>74 %</b> target: $\geq 75 \%$	+ 4 %	70%	
9	<b>FOCUS OF THE PROGRAM ON THE RURAL AND SEMI-URBAIN SECTOR</b>				
	% of linear metres in sector 1 and 2A	<b>100 %</b> target: $\geq 75 \%$	+ 28 %	72 %	
10	<b>AUTONOMY OF THE MARKET</b>				
	% of projects with a direct relation between client and mason (no intervention of AVN)	<b>17 %</b> target: $\geq 20 \%$	- 7 %	24 %	

## 5. Dashboard – IMPACTS SENEGAL

N°	INDICATORS	Results and objectives 2011-2012	Growth	Results 2011-2012	rating
1	<b>GROWTH OF THE PROGRAM</b> Average annual growth in linear metres	<b>31 %</b> target: $\geq 35 \%$	- 15 %	46 %	
2	<b>GEOGRAPHIC DEPLOYMENT</b> Number of localities reached	<b>17 localities</b> target: 15	55 %	11 places	
3	<b>BENEFICIARIES - PRODUCERS</b> Amount in linear metres	<b>198 m</b> target: 300 m cumul : 808 m	- 14 %	229 m	
4	<b>BENEFICIARIES - USER</b> Number of projects (number of clients)	<b>9 projects</b> Target: 10 projects cumul : 24 projects	29 %	7 projects	
5	<b>TRAINING OF MASONS</b> Number of trained masons C3 - C4 - C5	<b>0 new masons</b> cumul : 8 masons Target: 11 masons	0 %	cumul : 8 masons	
6	<b>ARTISANS AND ENTREPRENEURS</b> Qualification note (1 C4 = 1 point ; 1 C5 = 2 points)	<b>5 points</b> Target: 7 points	0 %	5 points	
7	<b>PRODUCTIVITY OF MASONS</b> Average amount of m <sup>2</sup> Nubian Vault per chief mason per season	<b>n/a</b>	unknown	unknown	
8	<b>FOCUS OF THE PROGRAM ON THE TARGET GROUP</b> Portion of clients type 1 and type 2 (number of projects)	<b>44 %</b> target: 30 %	+ 30 %	14 %	
9	<b>FOCUS OF THE PROGRAM ON THE RURAL AND SEMI-URBAIN SECTOR</b> % of linear metres in sector 1 and 2A	<b>84 %</b> target: 60 %	+ 43 %	41 %	
10	<b>AUTONOMY OF THE MARKET</b> % of projects with a direct relation between client and mason (no intervention of AVN)	<b>22 %</b>	unknown	unknown	



7- The productivity of the masons in Senegal remains very insignificant until now. The skilled labour is mainly attracted from abroad (Burkinabe and Malian masons).

10- Autonomy of the market: as the Senegalese program has just started the autonomy of the market is not an immediate target. It will naturally emerge from the implementation of the Pump-priming strategy in the coming years.