ENI CBCMED
Cooperating across borders in the Mediterranean

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REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

MED4EBM

Data report:

Agriculture sector

for

Kneiss Islands nature reserve

Mediterranean Forum For Applied Ecosystem-Based Management

Contents

Background

The MED4EBM Project aims at enhancing capacities of various stakeholders and institutional actors involved in the management of coastal and marine areas, and at establishing a cooperation and coordination platform for them to effectively implement Ecosystem-Based Integrated Coastal Zone Management (EB-ICZM). MED4EBM proposes the use of innovative tools to address the main issues that often limit the effective application of Ecosystem Management integrated in coastal-marine areas (EB-ICZM).

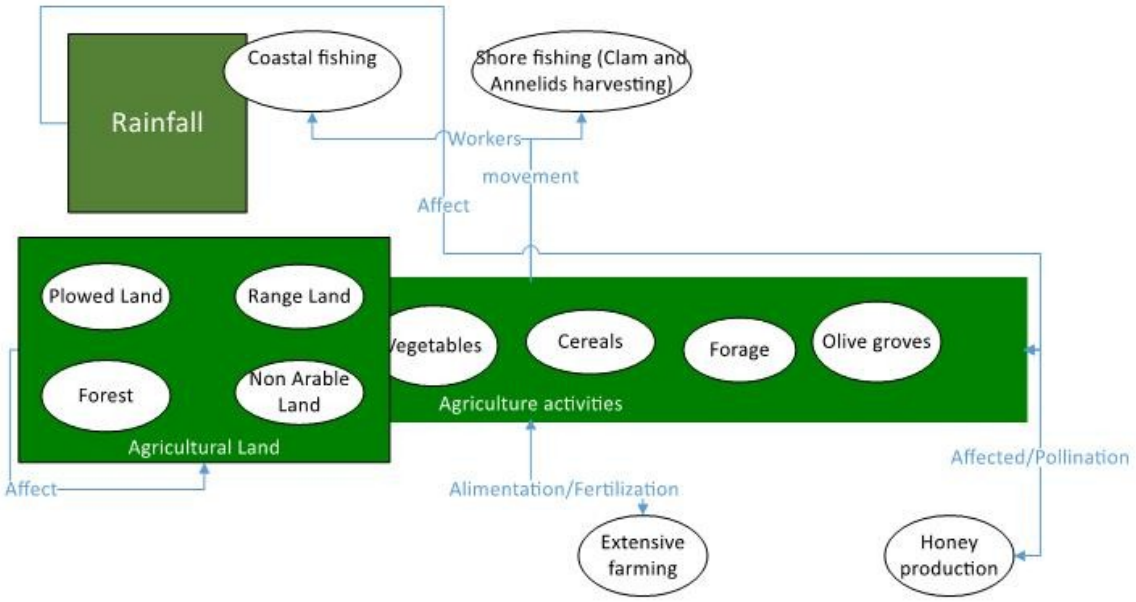
This innovative tool developed by PROGES and called Integrated Spatial Planning (PROGES-ISP), is based on specific analytical methods and software, which make EB-ICZM much easier for the professional team, interested parties and institutional decision makers involved. PROGES-ISP involves the use of specific software and a series of methodological, procedural and organizational tools, to plan, implement and monitor the dynamics of Ecosystem Management through a participatory and evidence-based approach supported by objective data. It allows the real-time analysis of a large amount of spatial and tabular data and the redaction of advanced reports, through an interface that facilitates the visualisation and the management of large amounts of data, that they could differ from each other by type, time scale and geographical extension. The methods and procedural and organizational tools proposed make it possible to manage analytical processes with a multi-stakeholder approach to Integrated Ecosystem Management of coastal areas, through a step-by step procedures based on deterministic methods, ecological analyses and socio-economic assessments. This approach allows project managers and stakeholders to quantitatively assess the relationships between ecosystem components, functions and services, along with associated human activities.

Objectives: This report aims to analyse in details ISP data series for agriculture in order to

- help in cause/ effect analysis document

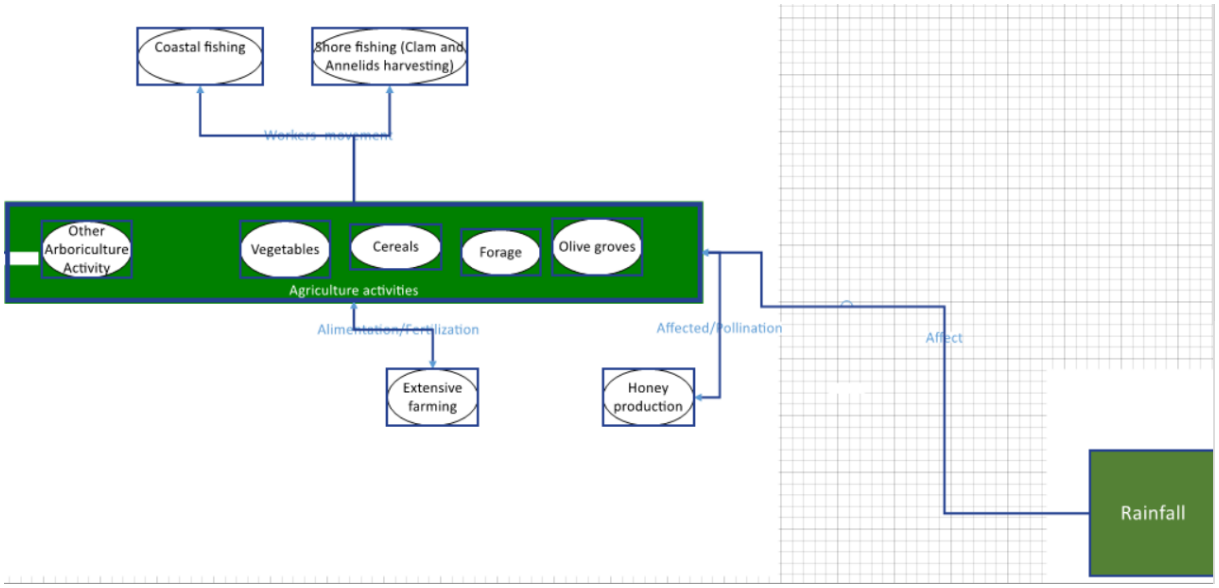
-come out with practical recommendations and conclusions which will help in the elaboration of governmental protocols

In this document we will be analysing the main components and subcomponents constitutiong and impacting agriculture sector. They are represented in this graph below.



A-Weather

Rainfall is the factor of the weather component affecting directly the agriculture activities.

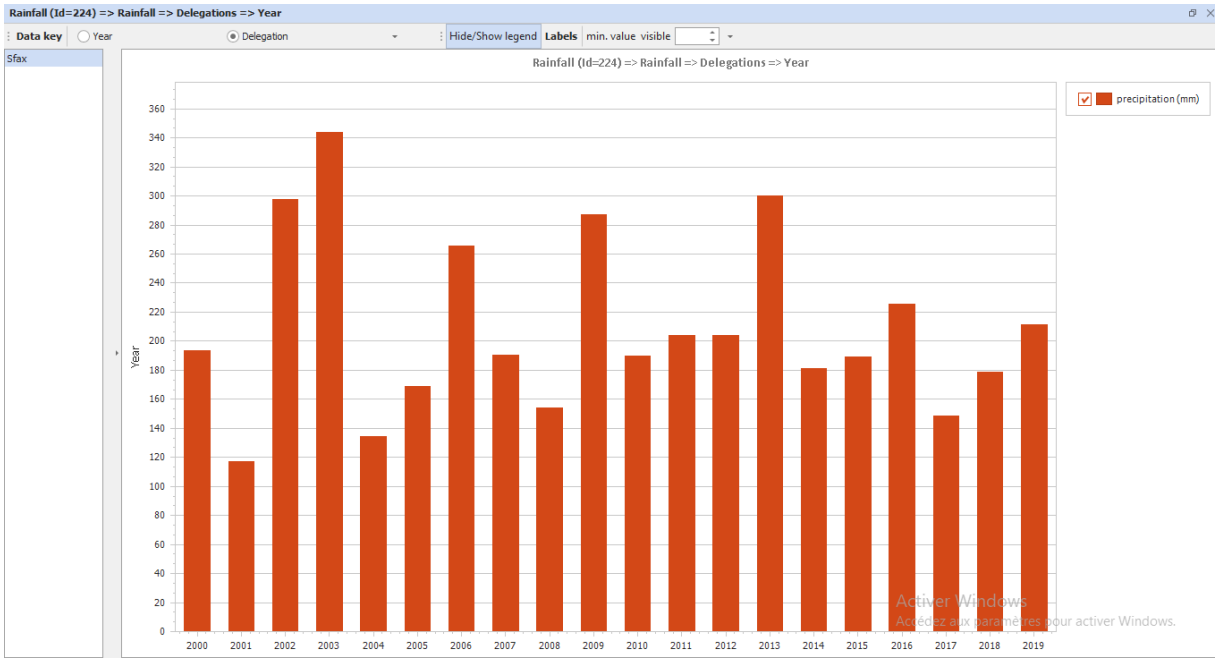


[Rainfall (Id=224)]

Indicators attached to component: Rainfall (Id=224)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Precipitation		www.tutiempo.com	Montly	
Rainfall		www.tutiempo.com	Yearly	

We work with the indicator "Rainfall" for yearly data series since the agriculture profuction is also yearly aggregated.

Sfax



Conclusion

->Checking the data with the stakeholders' knowedge, the year 2014 marked a high values of rainfall. It even reached 340 mm. This doesn't appear in the graph since the data were retrieved from Sfax meteorological station and don't reflect the data which can be different in the delegations of Skhira, Mahres and Ghraiba.

->Next step: Contact Mr. Karim from CRDA in order to provide us with the CRDA's private meteorological station's data in Sfax to verify our data.

B-Socio-economic sectors

II-Agriculture activities (Component)

[Agriculture activities (Id=121)]

Surface and production are very related indicators. The production is impacted by rainfall and climate variations. Purshasing the lands is cheaper in Skhira and that's why the agricultural surfaces are increasing more than the other delegations.

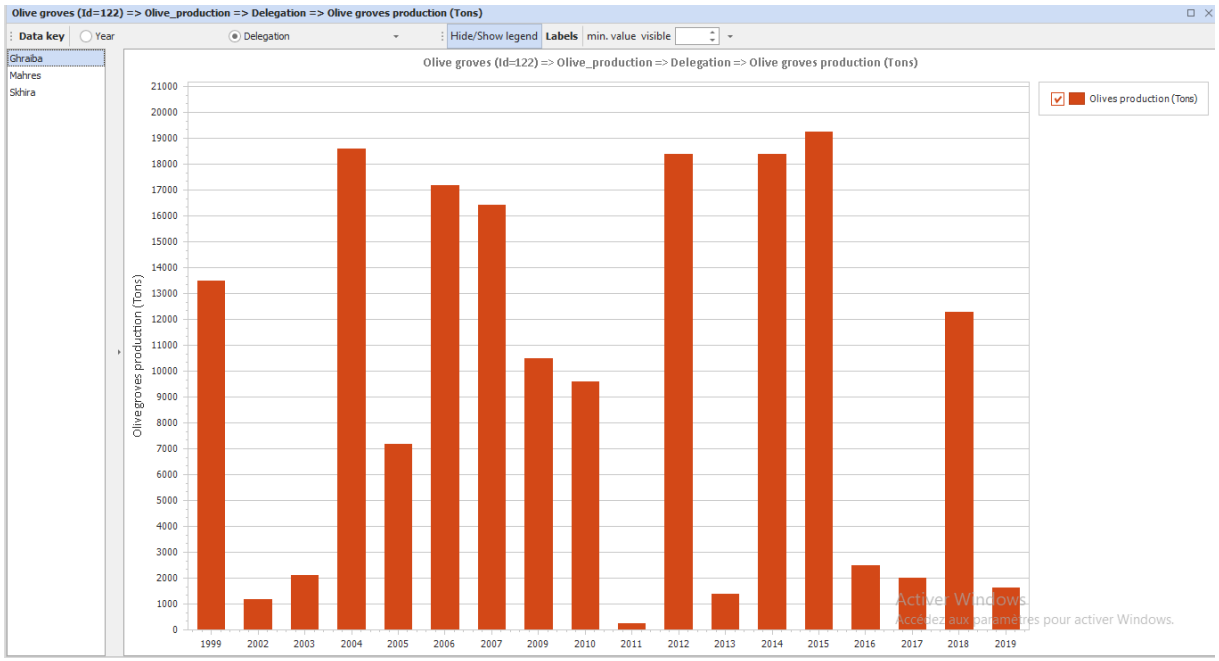
1-Olive groves (subcomponent)

[Agriculture [Olive groves [Agriculture activities (Id=121)](Id=122)]

Indicators attached to component: Olive groves (Id=122)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Olive_production		CRDA	Annual	
Olive_surface		CRDA	Annual	

a) Ghraiba

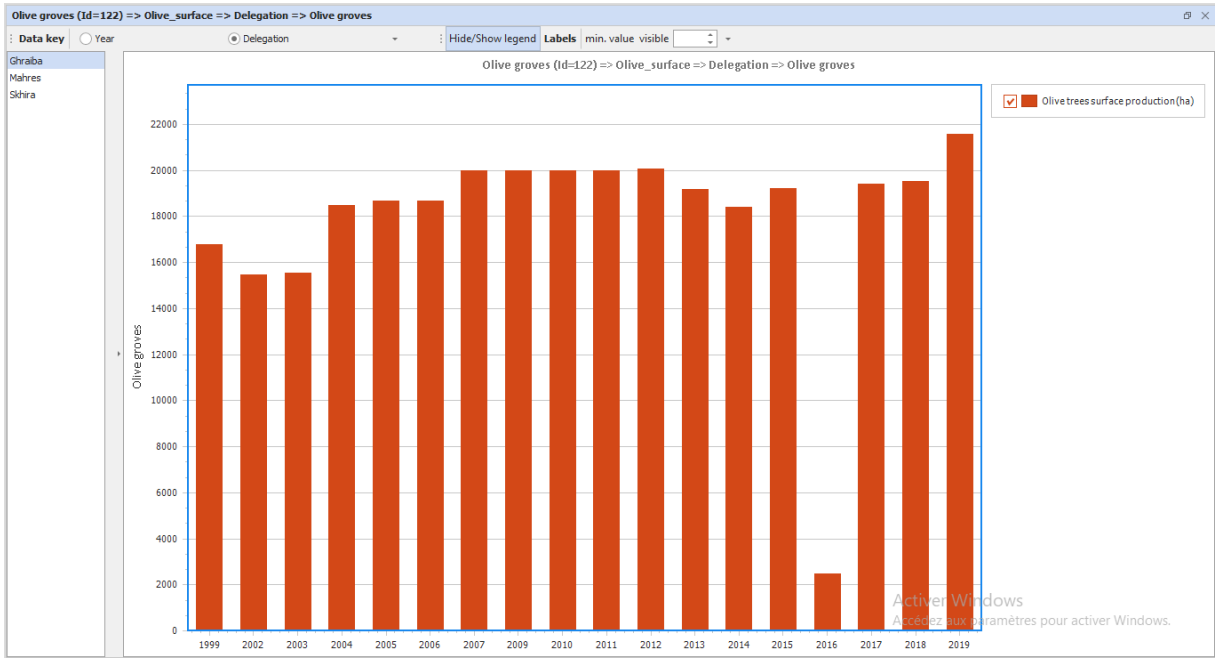
****Production (indicator)***



Conclusion

The values in 2002, 2003, 2016 and 2017 are explained by the lack of precipitation (dry years). The maximum of the production in 2015 is explained by the fact that there was a big rainfall in 2014 (confirmed by thematic experts). We can't confirm this by the graph of rainfall because the latter concerns all of Sfax.

Surface

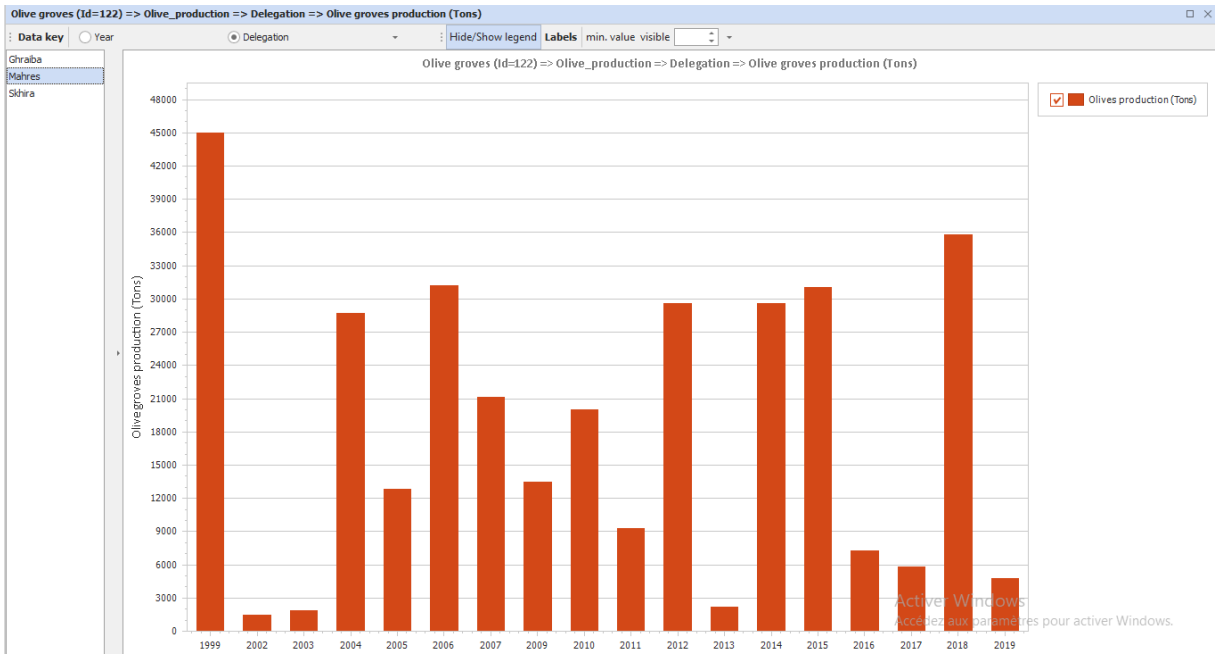


Conclusion

->Mistake in 2016 in data entery. Instead of typing the surface, the production was entered.

b) Mahres

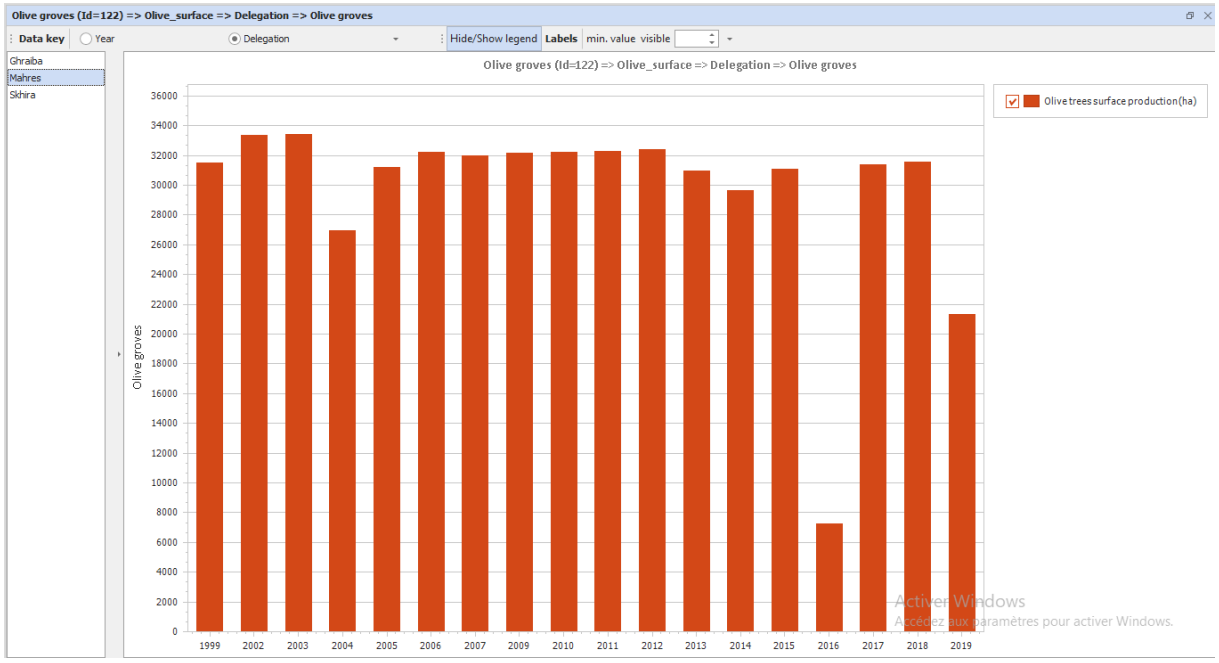
Production



Conclusion

In general, the production follows a year by year cycle (alternation). The values in 2002, 2003 and 2013 correspond to dry years.

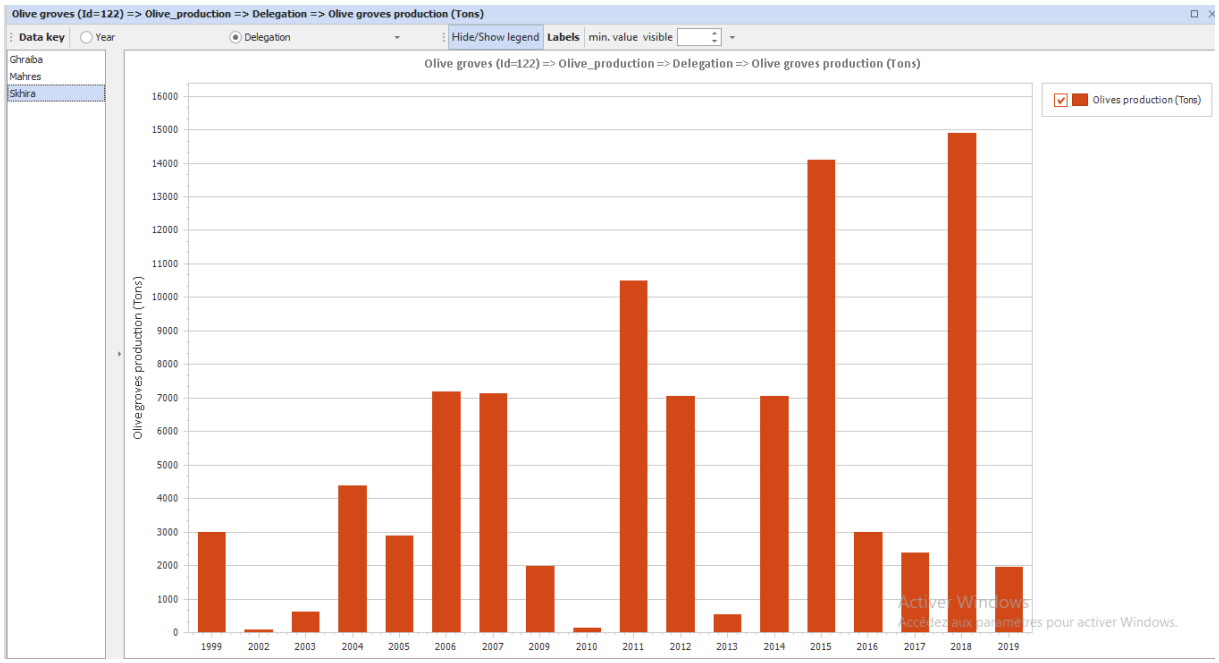
Surface



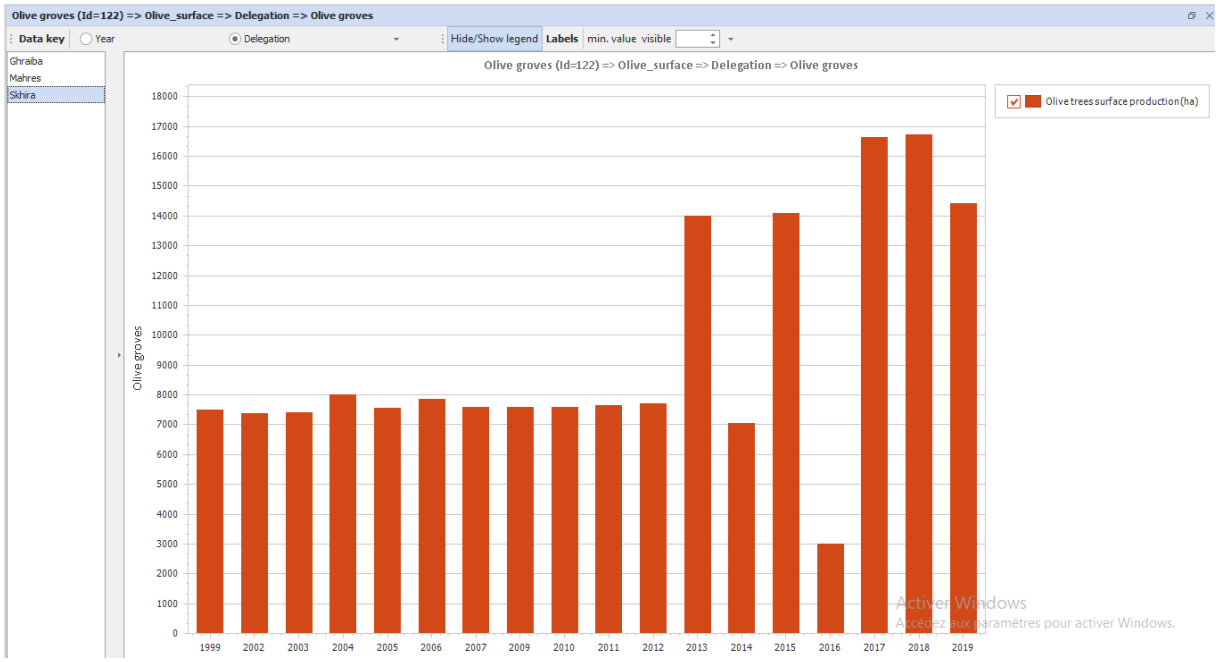
There is a Mistake in data entery in 2016.

c) Skhira

Production



Surface



Conclusion

The value in 2016 is a mistake in the data entery.

->For olive groves the lowest value was registered in 2016 in all the delegations. This value looks like an anomaly in the data and it was confirmed by the stakeholders.

->Data for 2000 and 2001 aren't available.

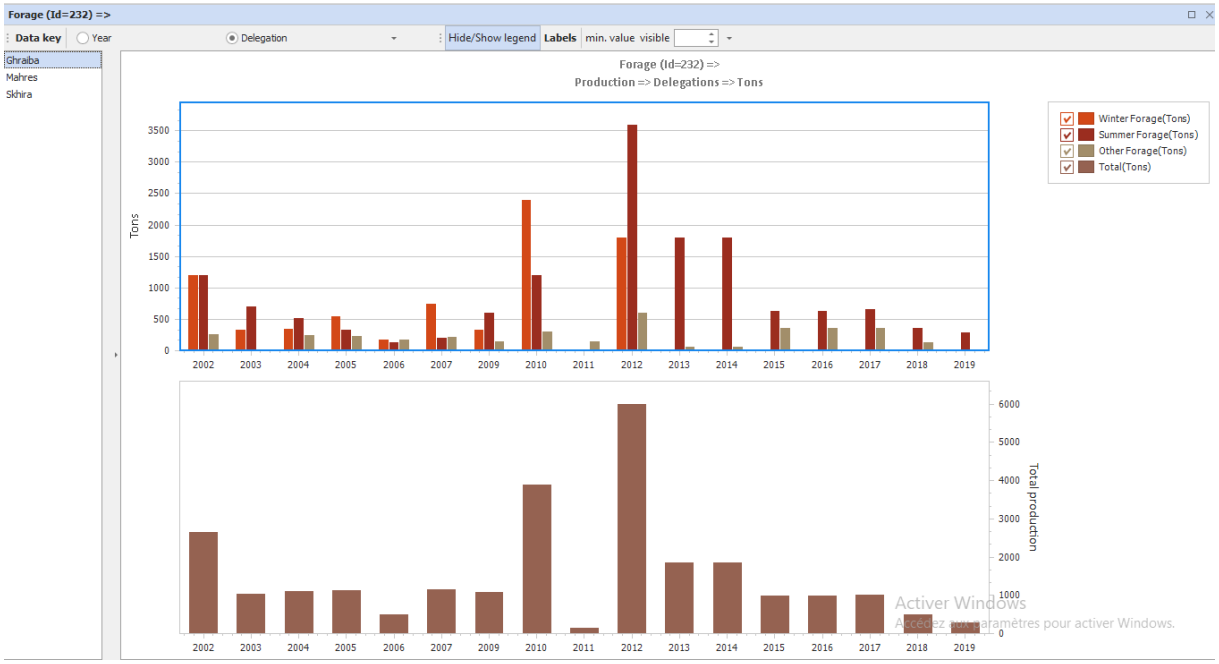
2-Forage (subcomponent)

[Agriculture [Forage [Agriculture activities (Id=121)](Id=232)]

Indicators attached to component: Forage (Id=232)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Production		CRDA	Annual	
Surface		CRDA	Annual	

a) Ghraiba

****Production***

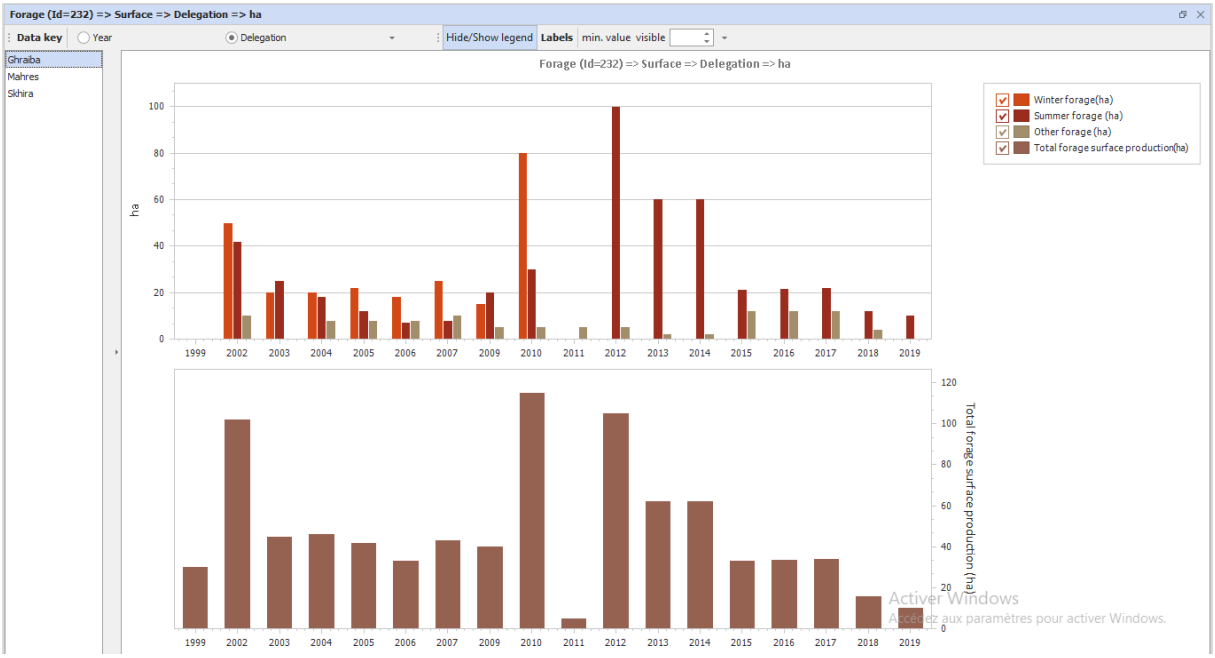


Conclusion

->The production is decreasing beauce there's not enough water resources.

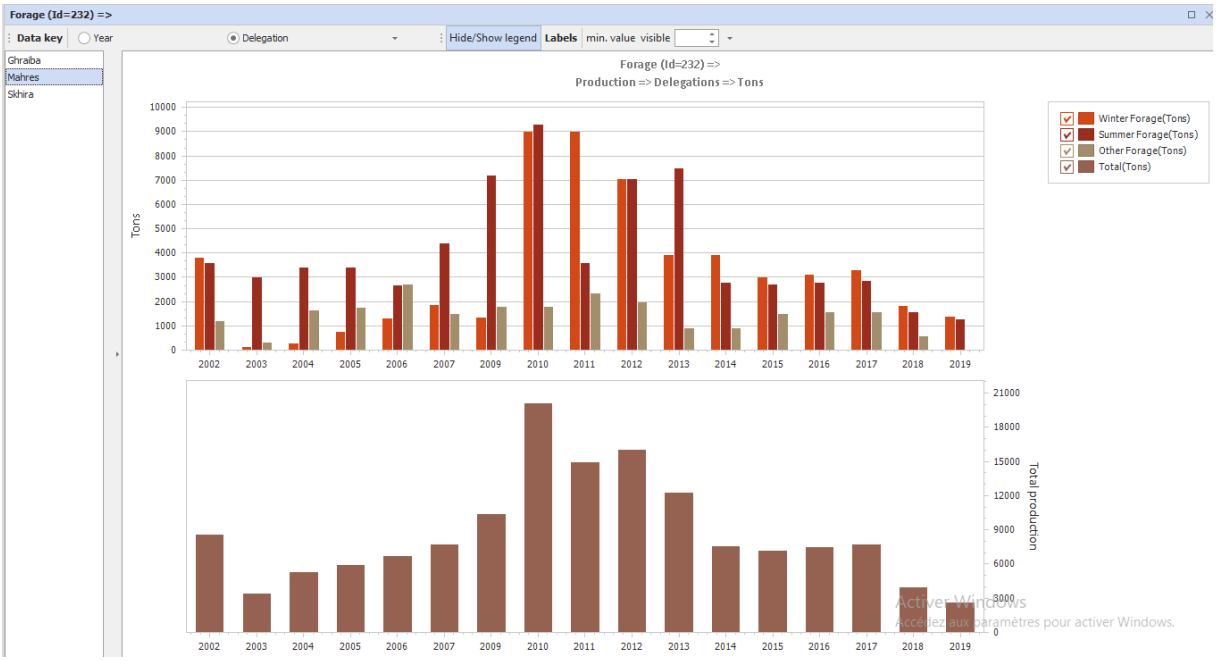
->The summer forage is dominating the other types of forage. It for self-use.

****Surface***

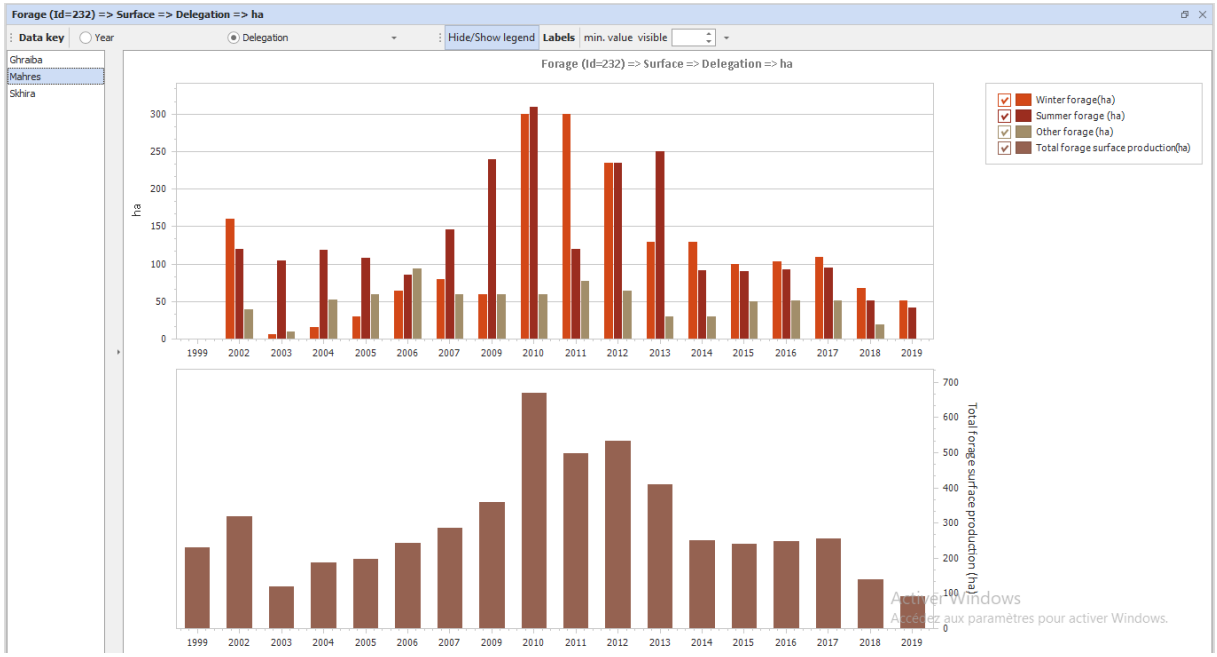


b) Mahres

*Production

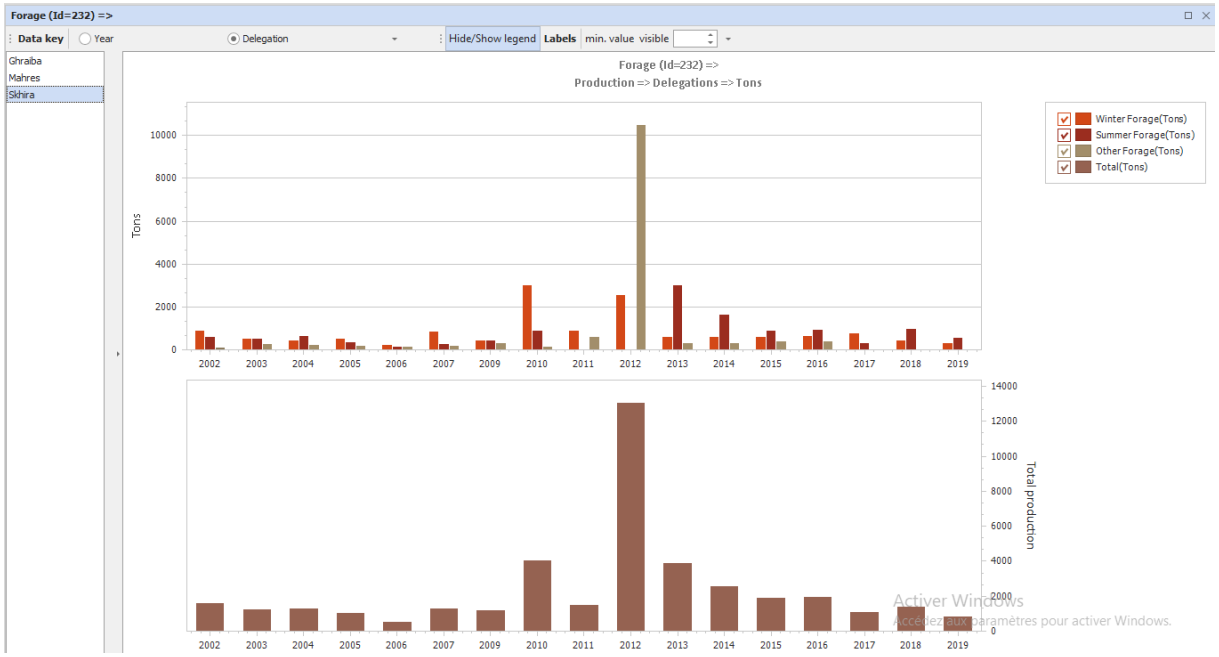


*Surface

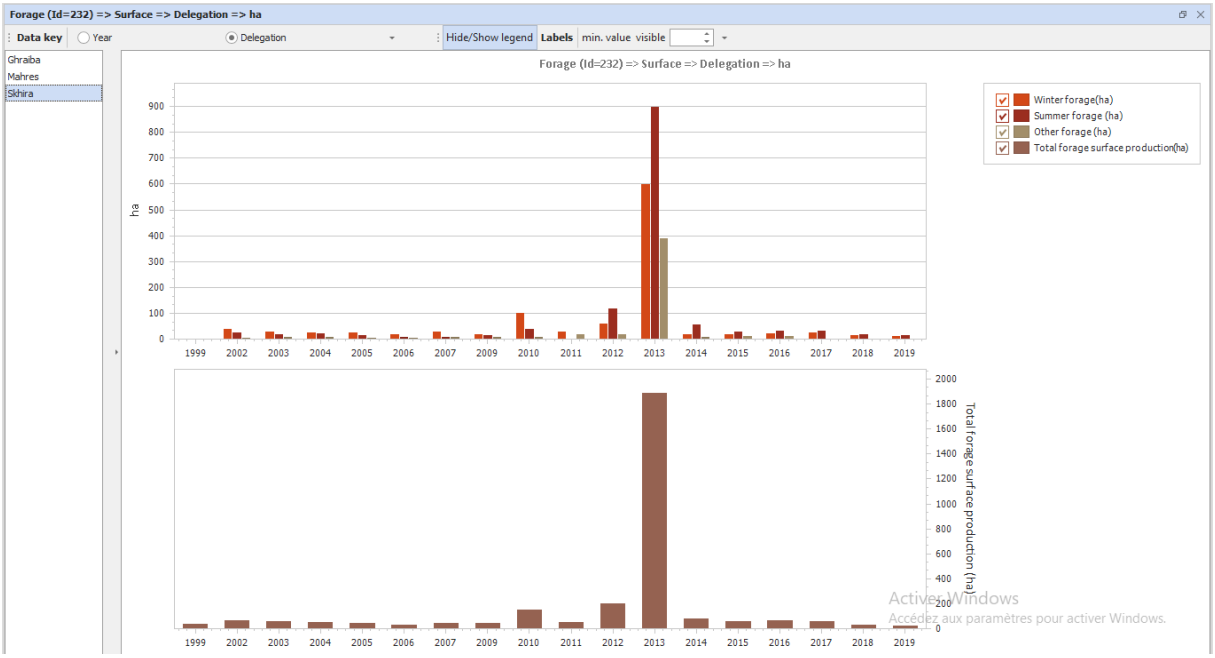


c) Skhira

**Production*



**Surface*



Conclusion

->There's always the gap in Data for 2000, 2001 and 2008.

->The surface of production decreased suddenly in Ghraiba in 2011 recording only the surface of other forage and increased suddenly in Skhira in 2013.

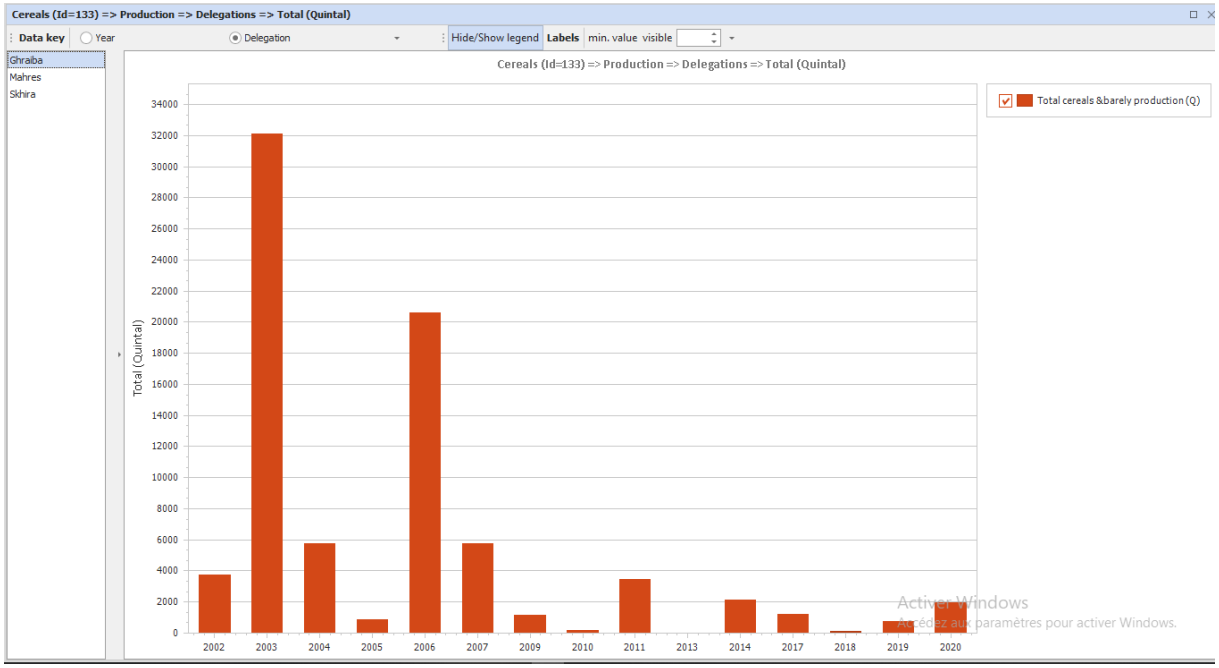
3-Cereals (subcomponent)

[Cereals (Id=133)]

Indicators attached to component: Cereals (Id=133)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Production		CRDA	Annual	
Surface		CRDA	Annual	

a) Ghraiba

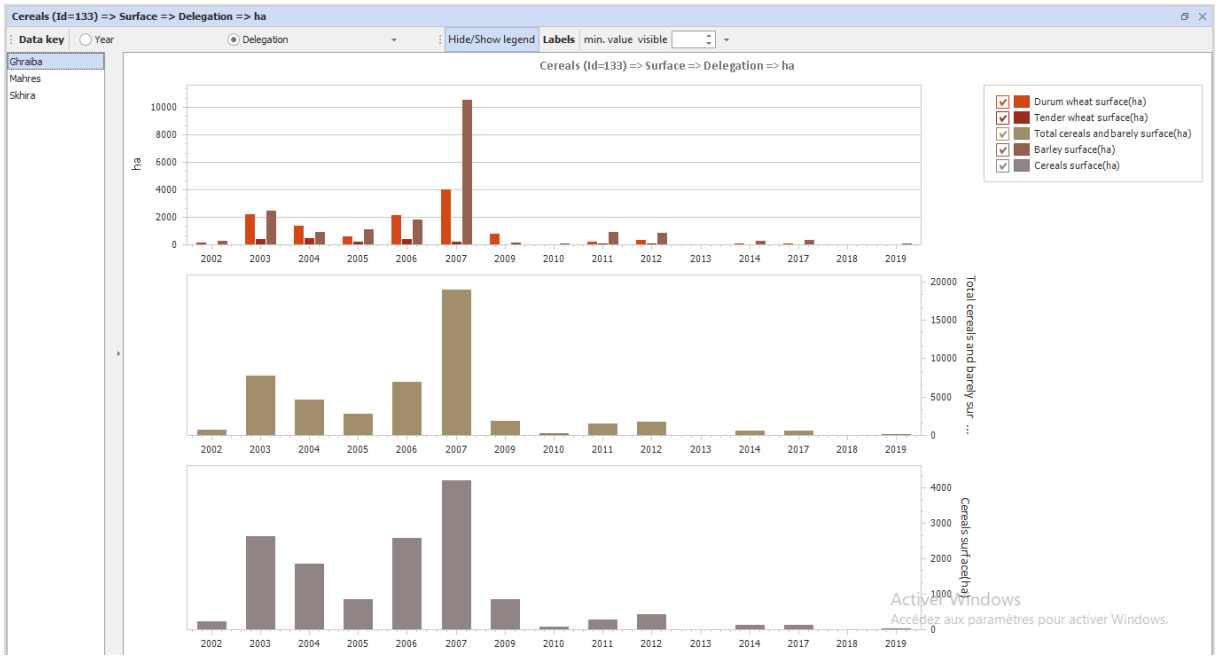
****Production***



Conclusion

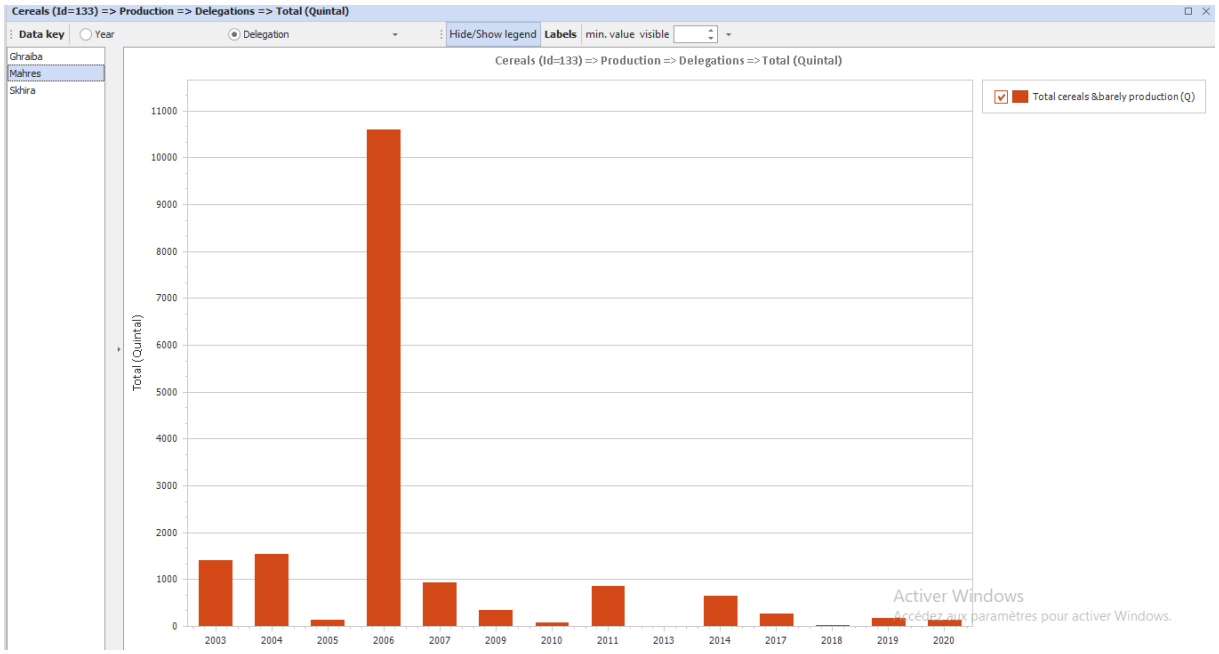
After the years 2006 and 2007, there's no big rainfall.The production is for self_consumption (not destined for industries).

Surface

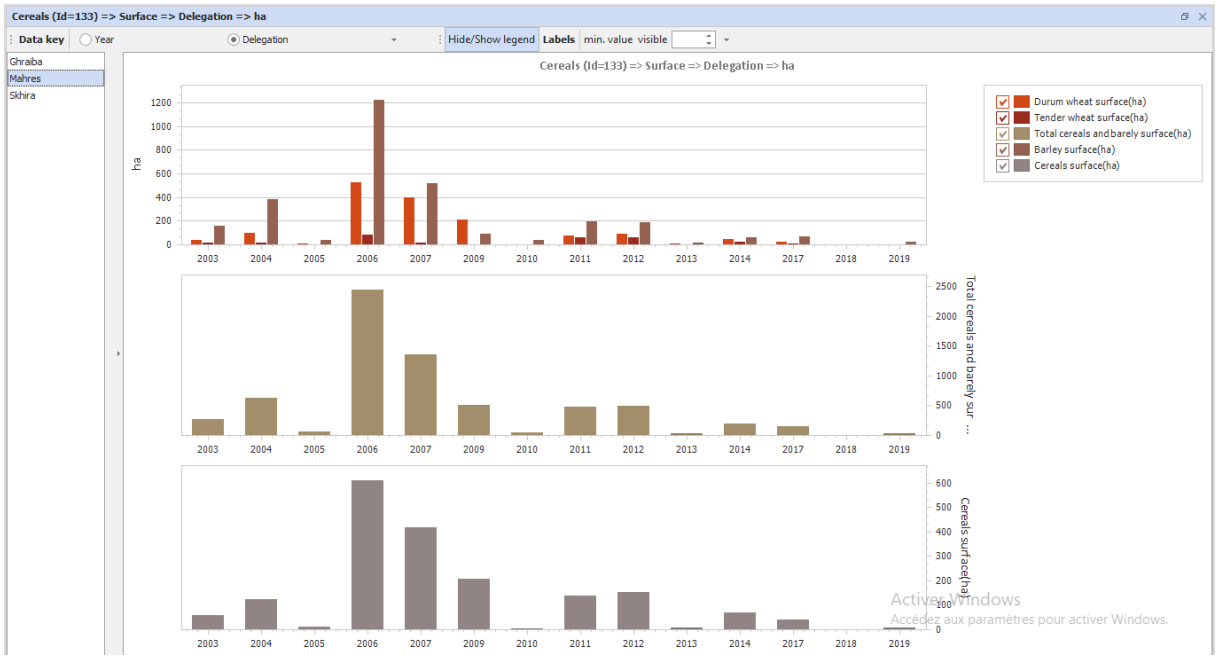


b) Mahres

***Production**

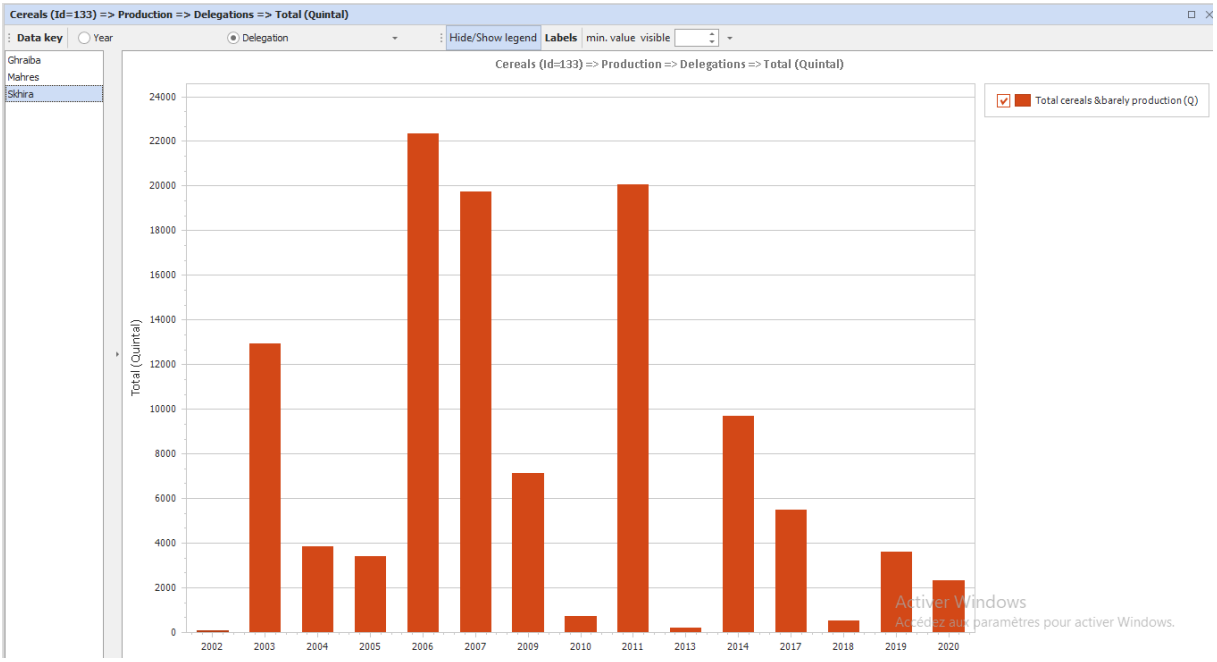


Surface

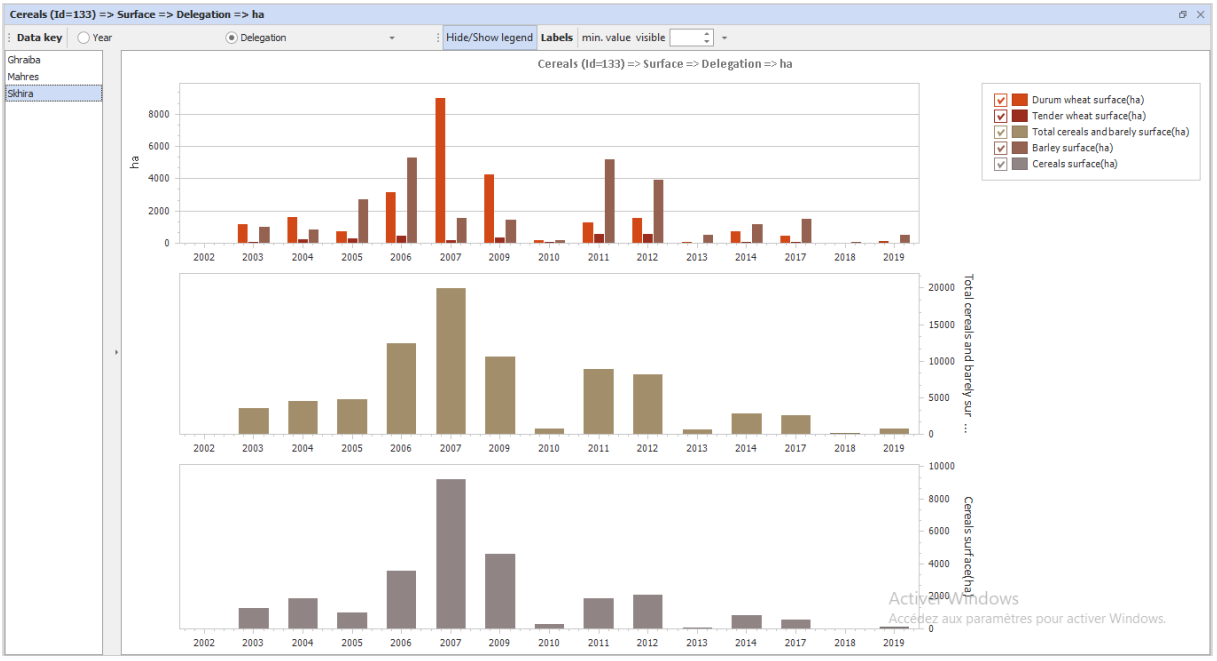


c) Skhira

Production



Surface



Conclusion

->For cereals, the surface production decreased considerably after 2007.

4-Vegetables (subcomponent)

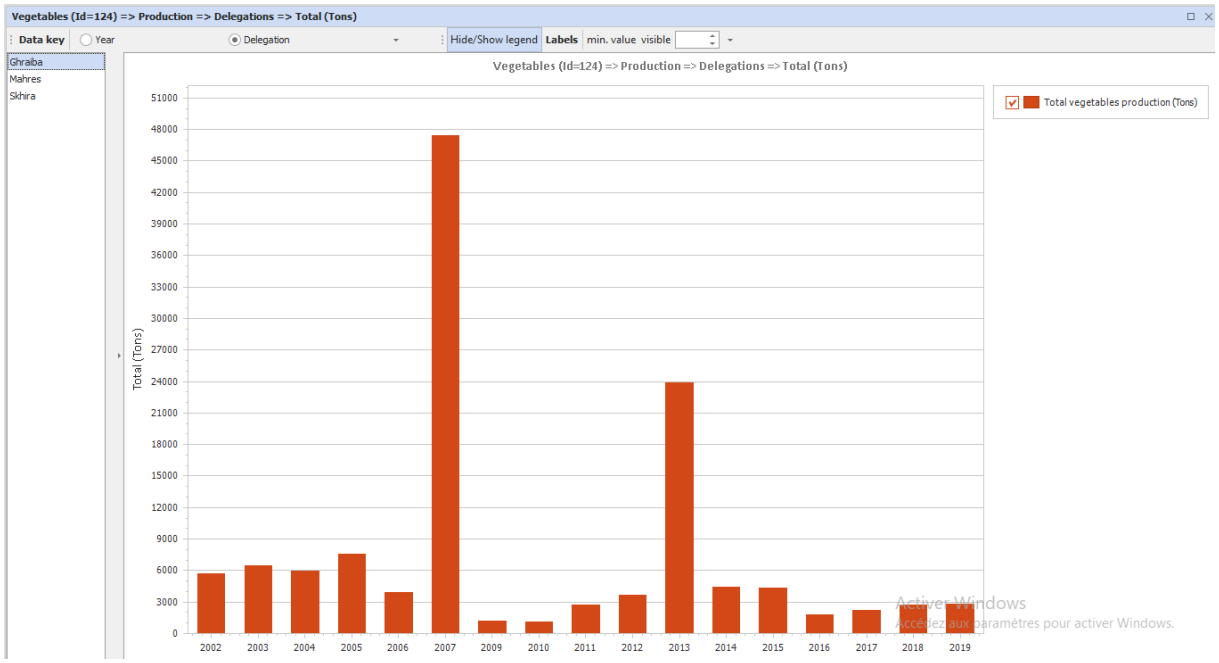
[Vegetables (Id=124)]

Indicators attached to component: Vegetables (Id=124)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**

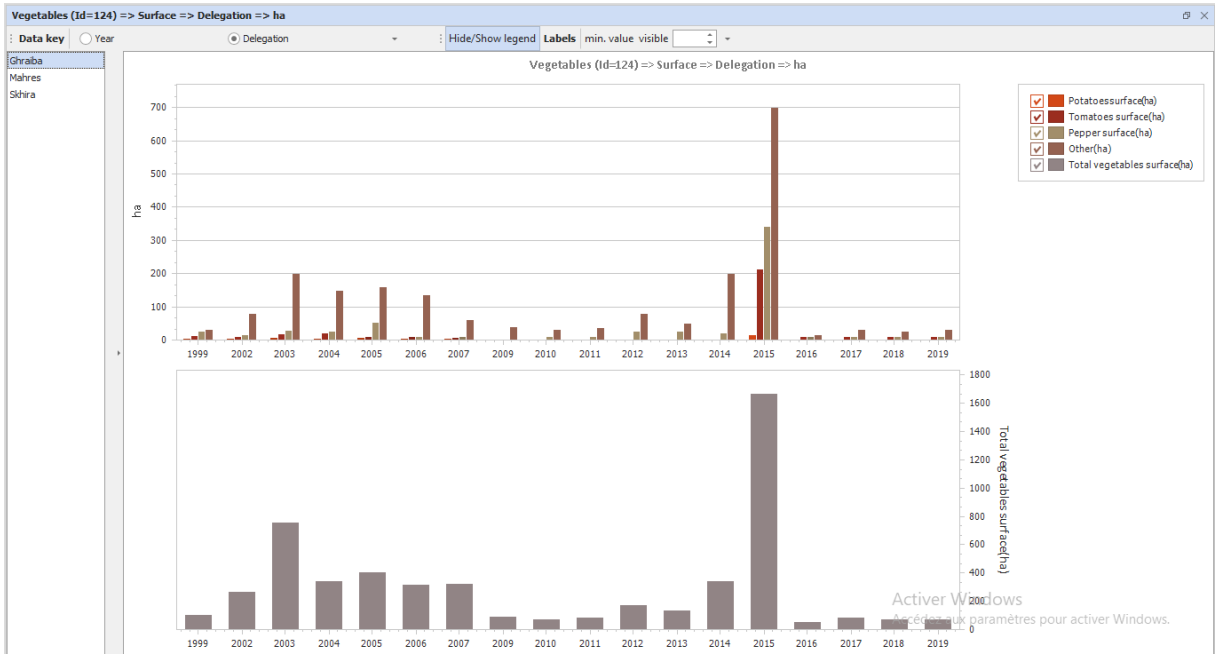
Production		CRDA	Annual	
Surface		CRDA	Annual	

a) Ghraiba

****Production***

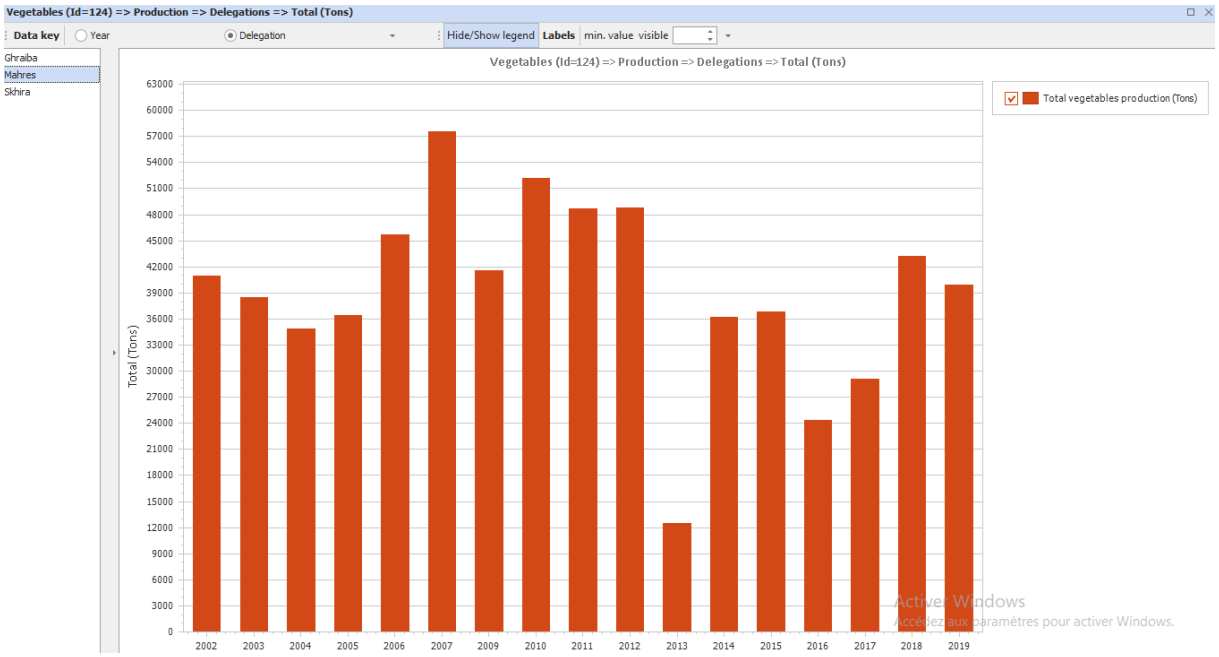


****Surface***

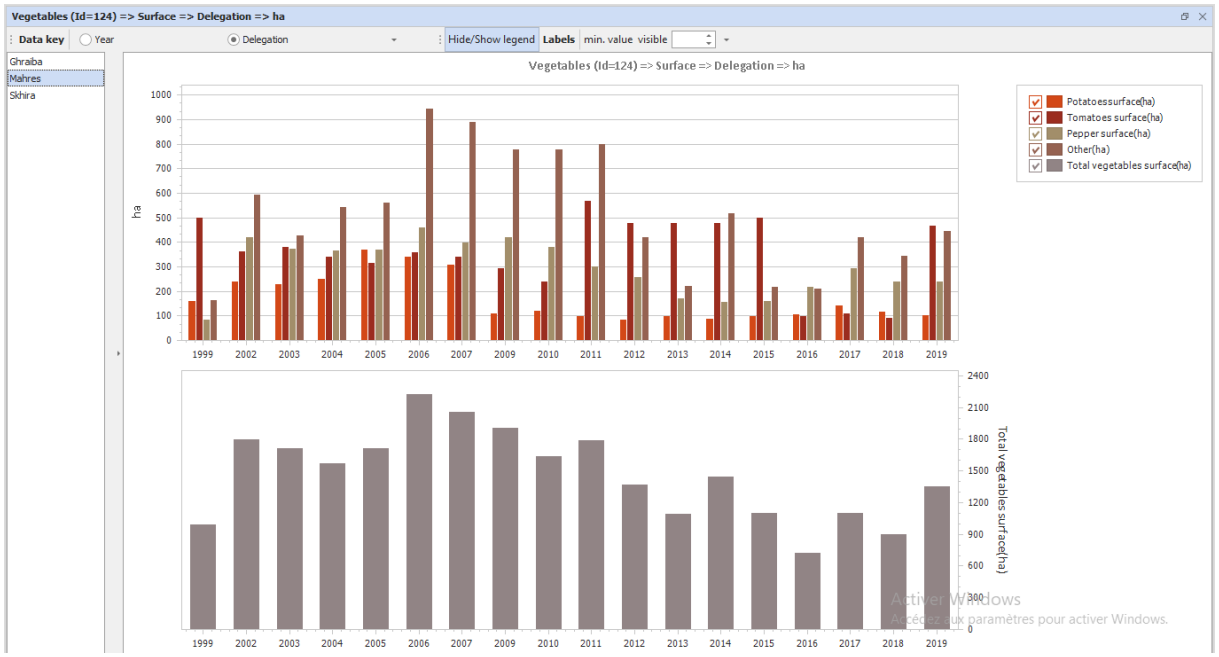


b) Mahres

****Production***

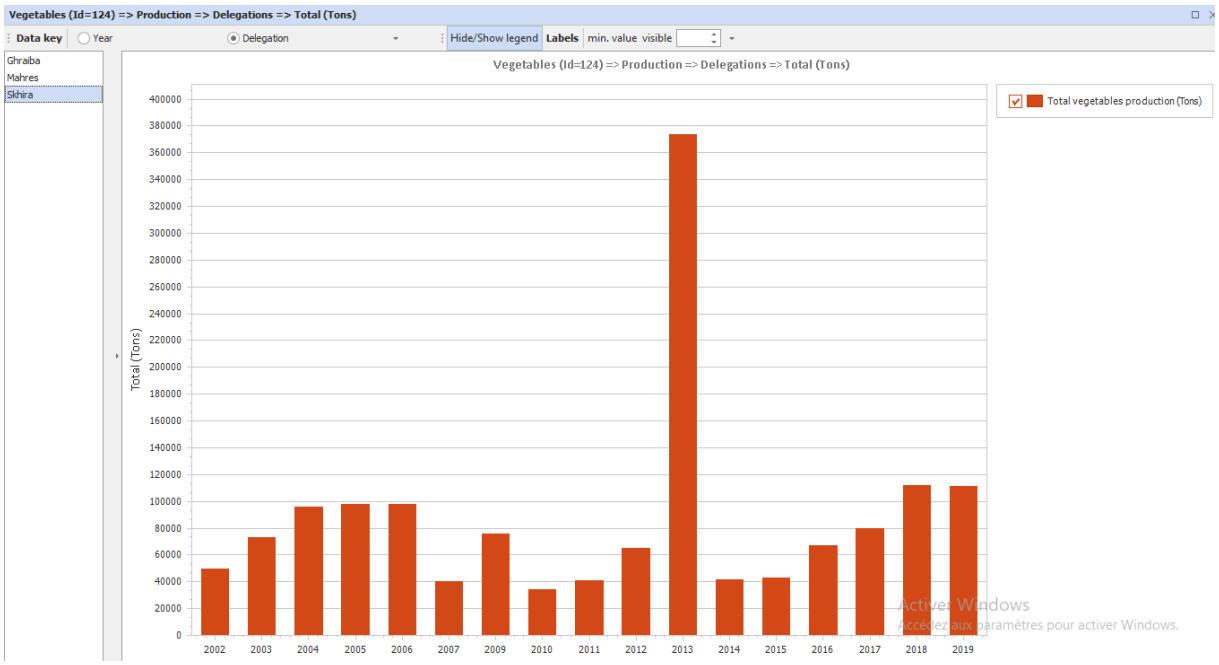


Surface

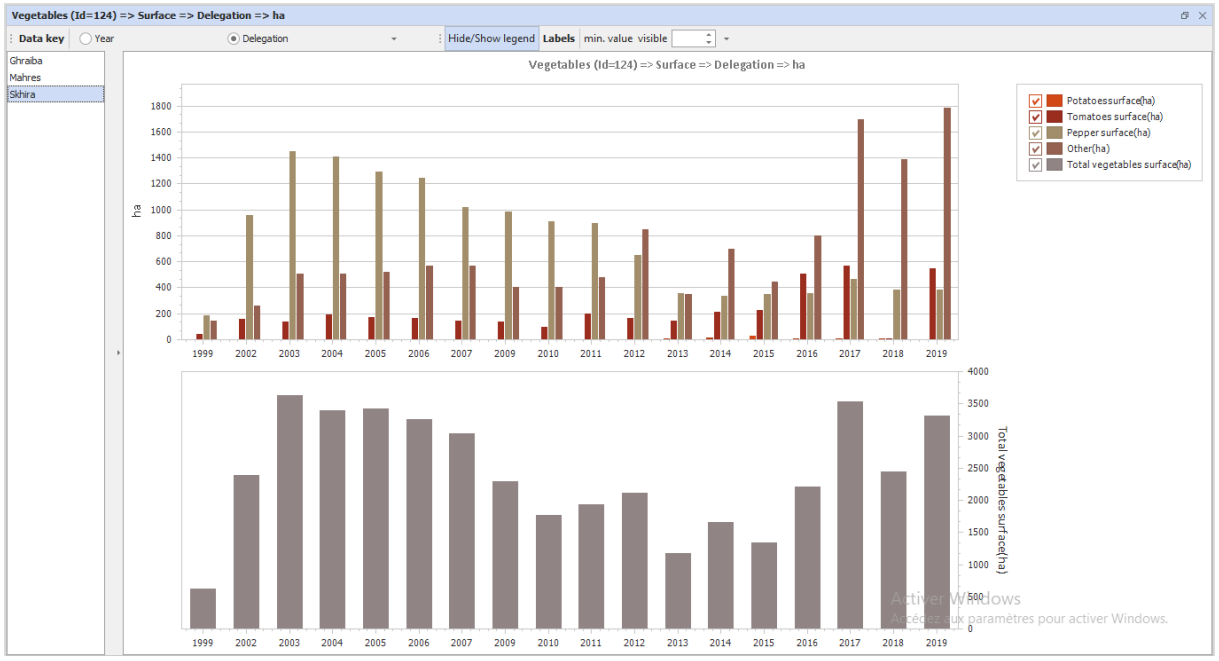


a) Skhira

Production



Surface



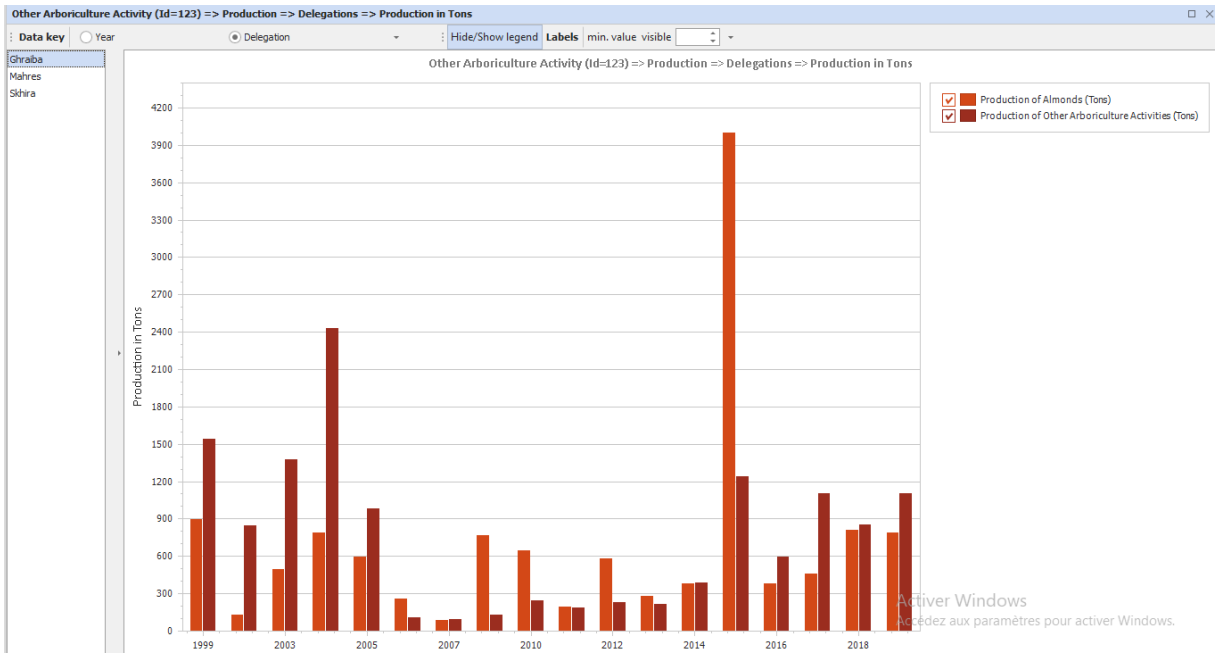
5-Other Arboriculture activity (subcomponent)

[Other Arboriculture Activity (Id=123)]

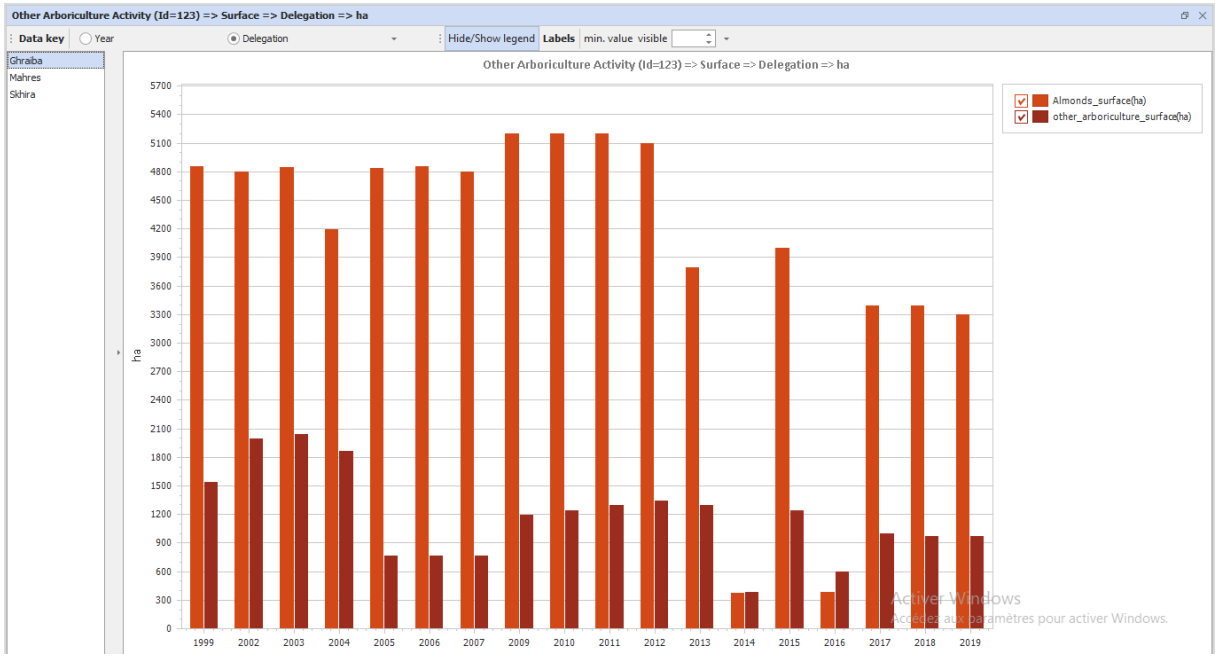
Indicators attached to component: Other Arboriculture Activity (Id=123)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Production		CRDA	Annual	
Surface		CRDA	Annual	

a) Ghraiba

***Production**

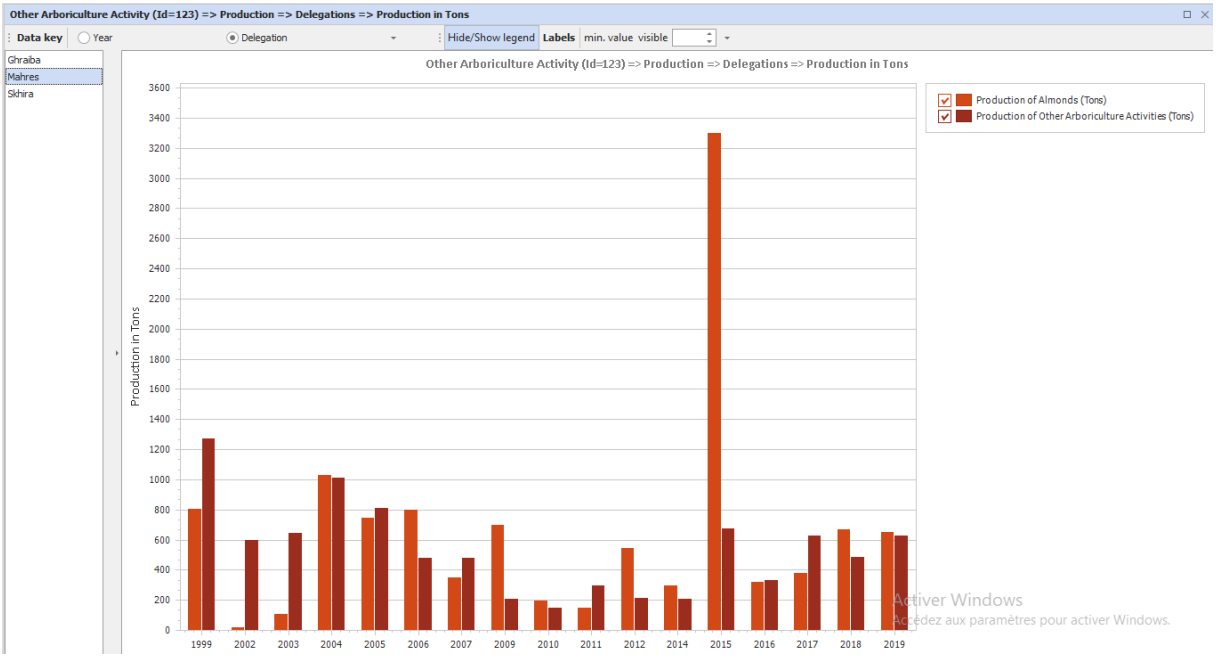


***Surface**

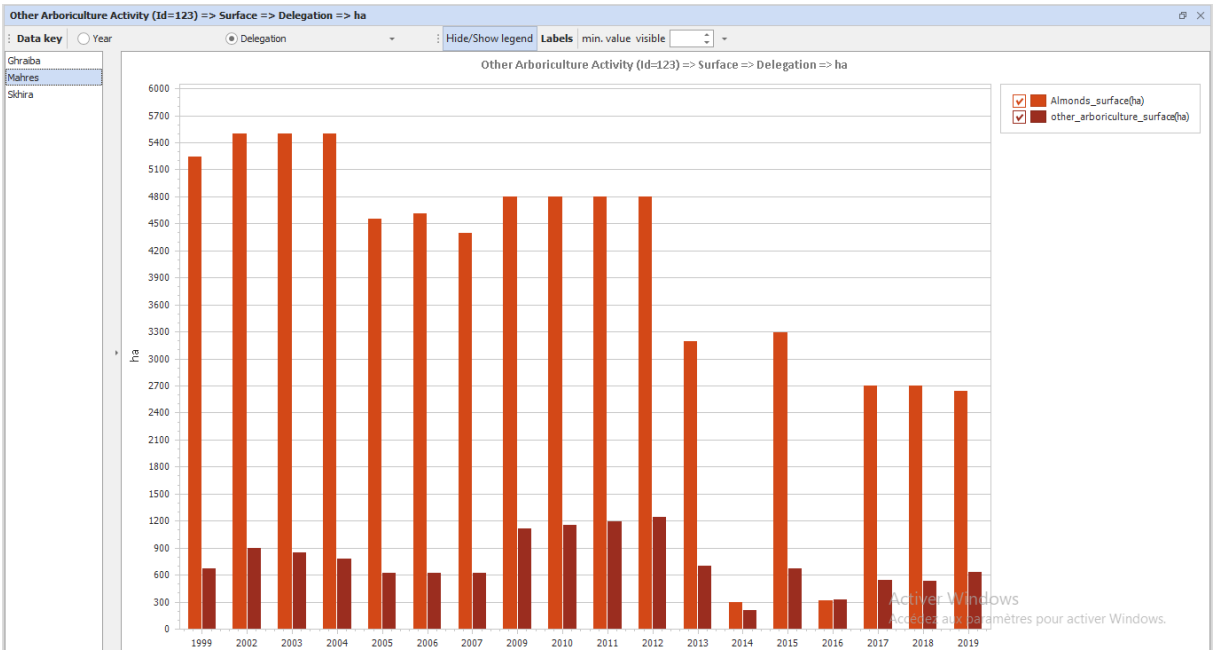


b) Mahres

***Production**

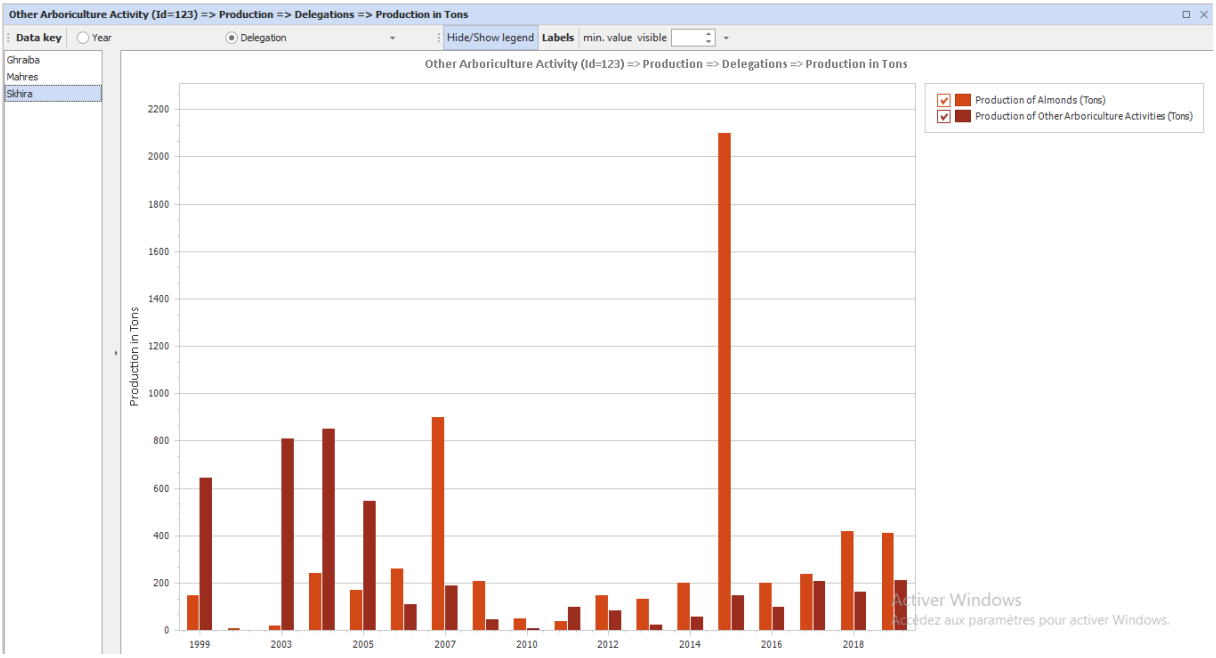


Surface

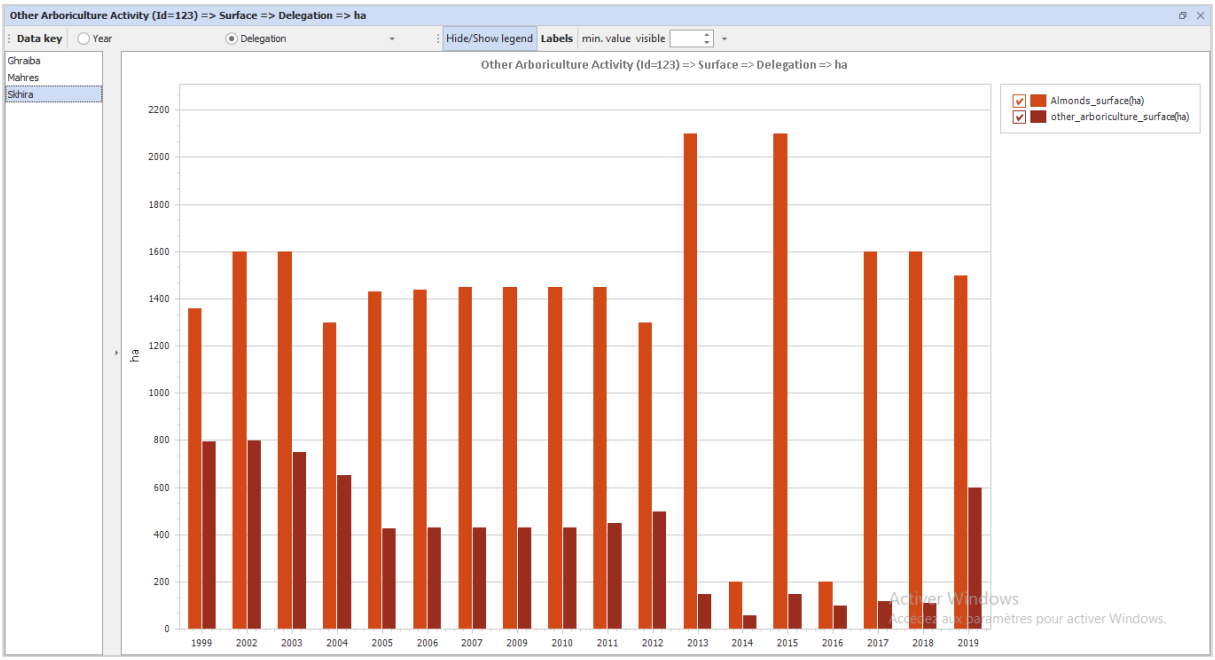


c) Skhira

Production



Surface



Conclusion

->In 2014, in both Ghraiba and Skhira there was a sudden decrease of the the values of the surface production.

->The surface production of almonds is dominating all the arboriculture surfaces.

->Always gaps in 2000 and 2001.

III-Livestock (component)

[Livestock (Id=125)]

1-Extensive farming (subcomponent)

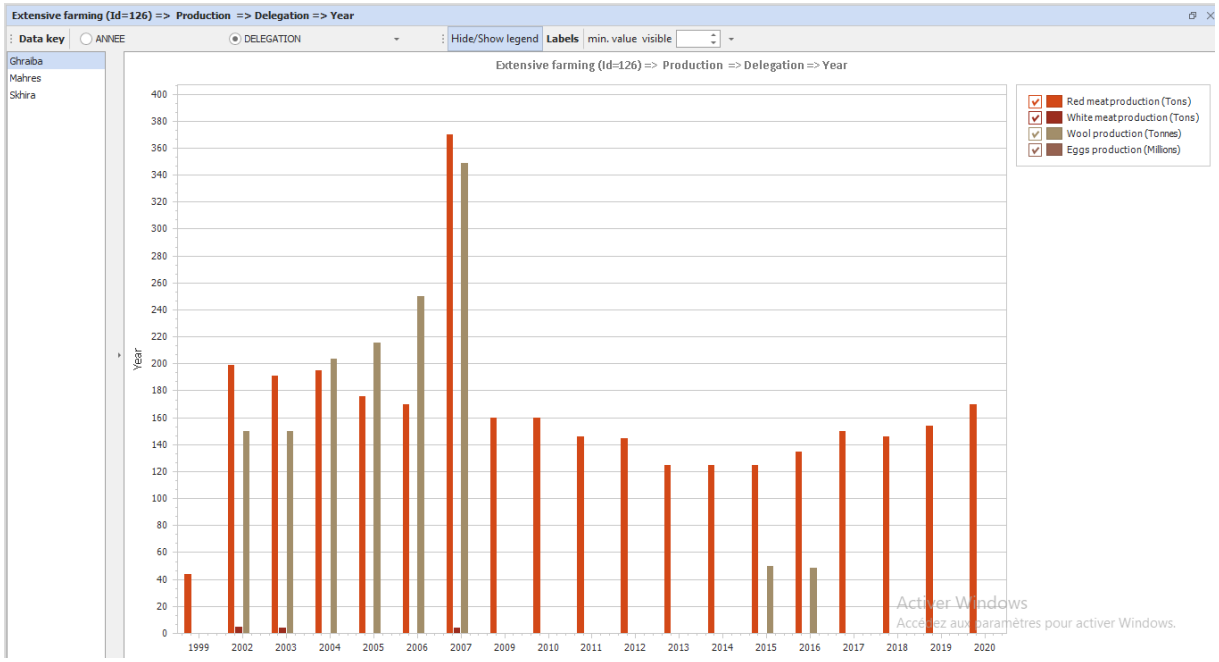
[Extensive farming (Id=126)]

Indicators attached to component: Extensive farming (Id=126)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Production		CRDA	Annual	
Numbers of Heads		CRDA	Annual	

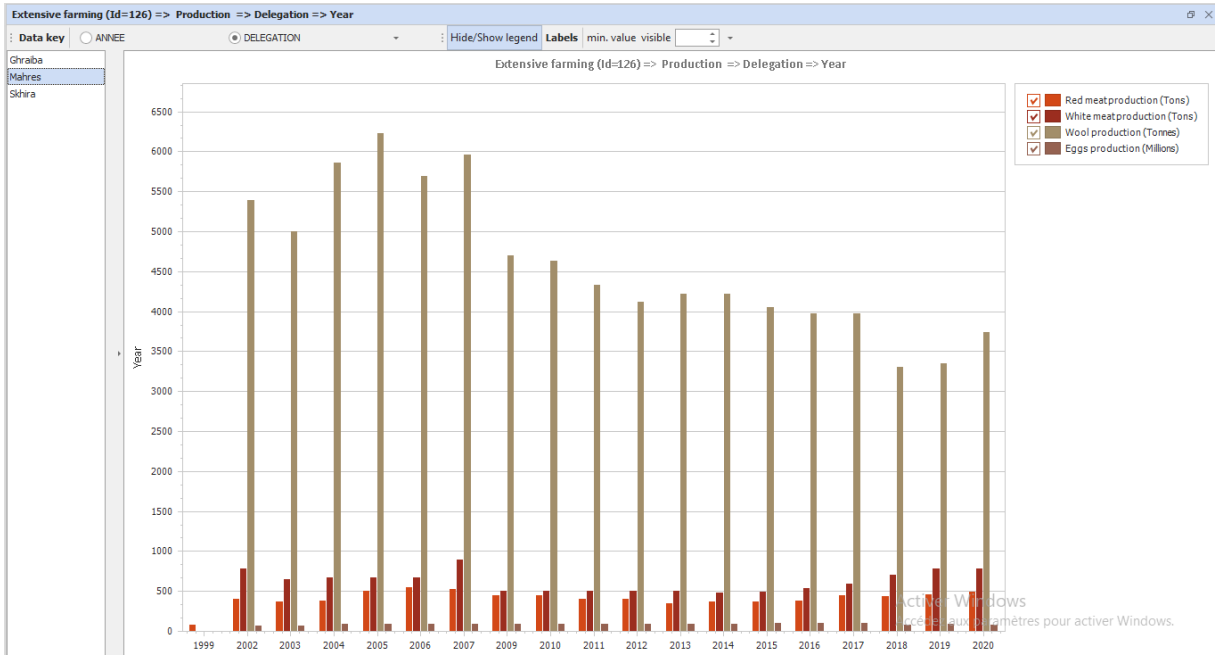
1.1-Production (indicator)

First indicator is "Production".the data series are Red meat production (Tons), White meat production (Tons), Milk production (Tons), Eggs production (Millions) and Wool production (Tonnes).

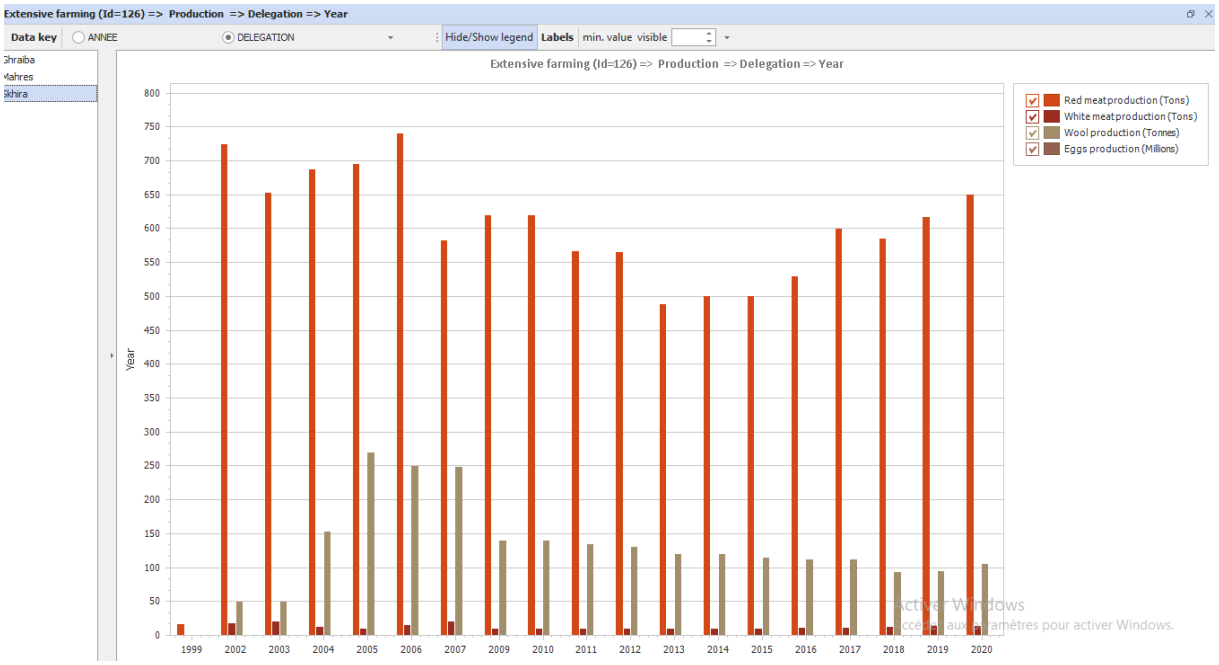
a) Ghraiba



b) Mahres



c) ***Skhira***



Conclusion

->There are gaps in data in all delegations from 2000, 2001 and 2008.

->In Ghraiba wool is not produced anymore from 2004 until 2014 and 2017 until 2020. Red meat represents most of the production. Eggs aren't produced in this delegation.

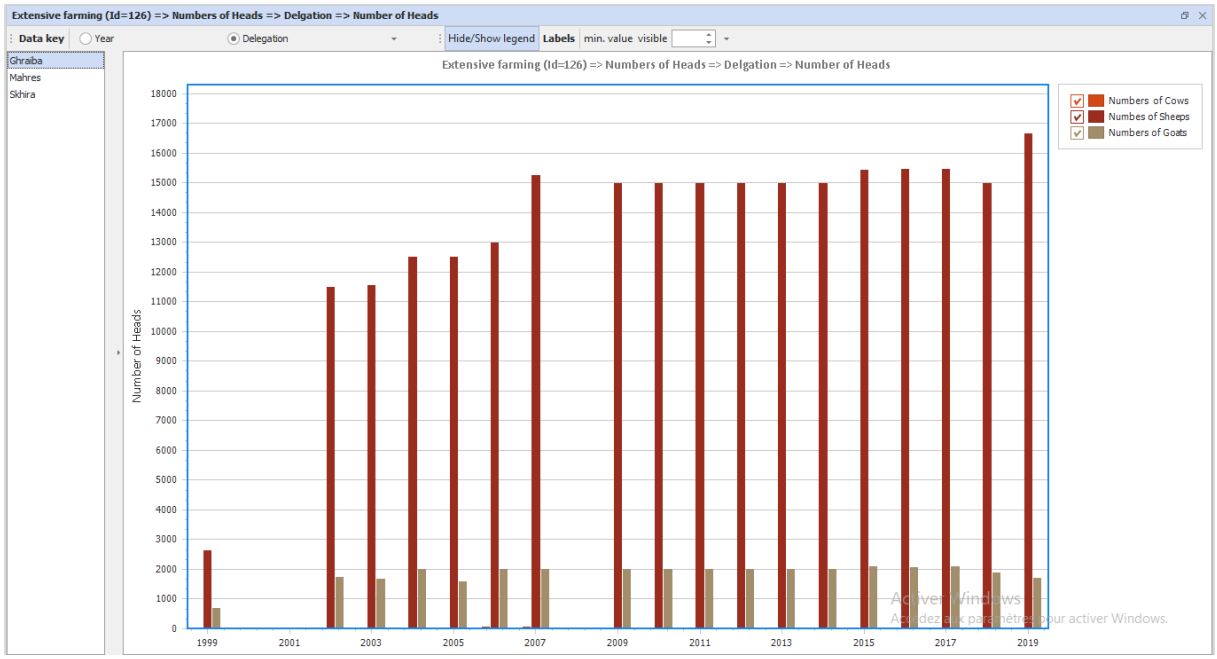
->In Mahres wool production dominates all the other productions.

->In Skhira red meat dominates all the other productions. The production of eggs is not developed in this region.

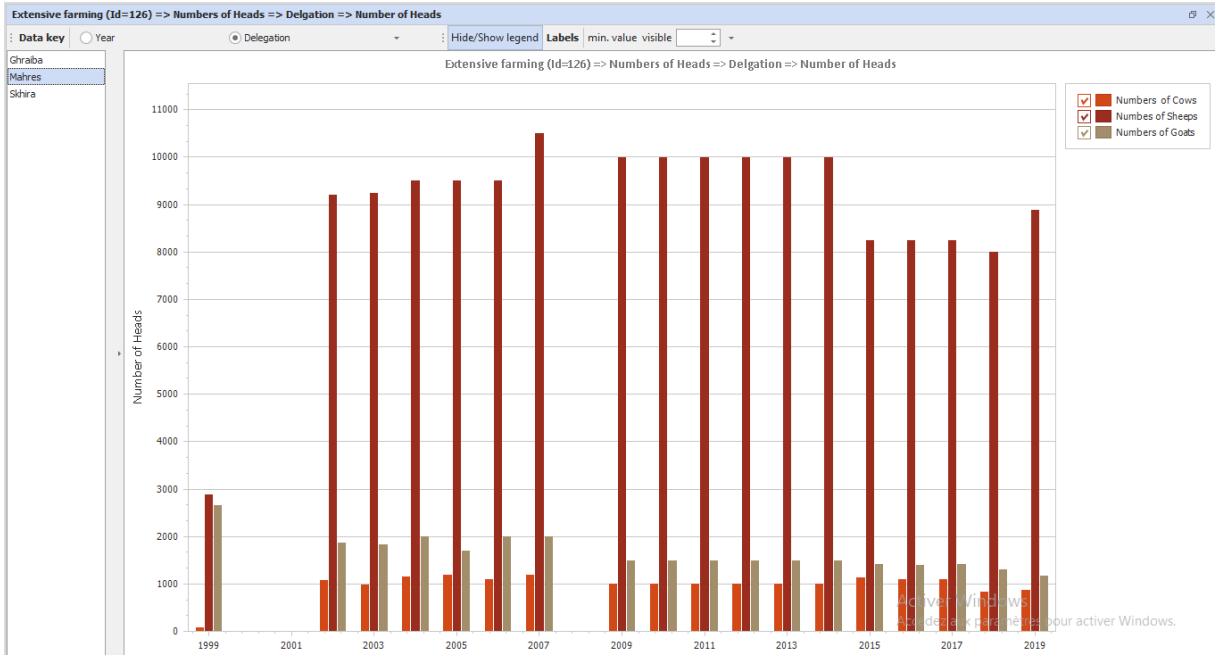
1.2-Number of heads (indicator)

The second indicator is "Number of Heads". The data series are Number of cows, number of sheep and number of goats.

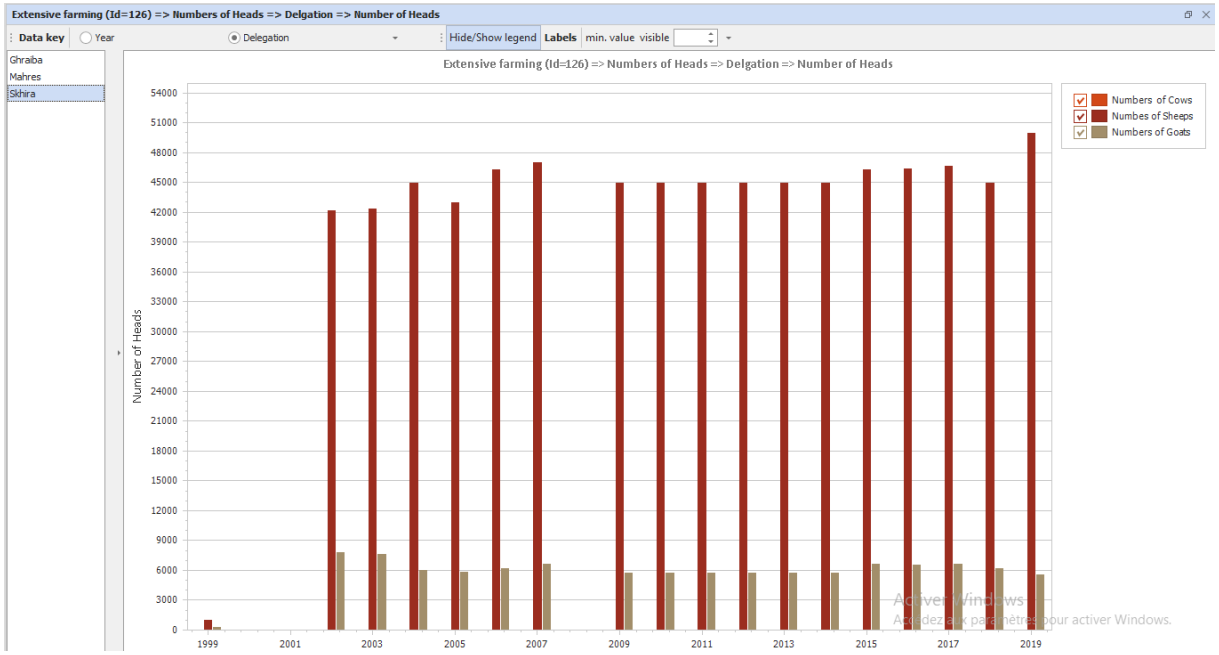
a) Ghraiba



b) Mahres



c) Skhira



Conclusion

->There are gaps in Data for all governorates in 2000, 2001 and 2008.

->The production is stable and regular. It's dominated by the number of sheeps.

2-Honey production (subcomponent)

[Honey production (Id=128)]

Indicators attached to component: Honey production (Id=128)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Production				

There are no data for this indicator.

C-Ecosystem

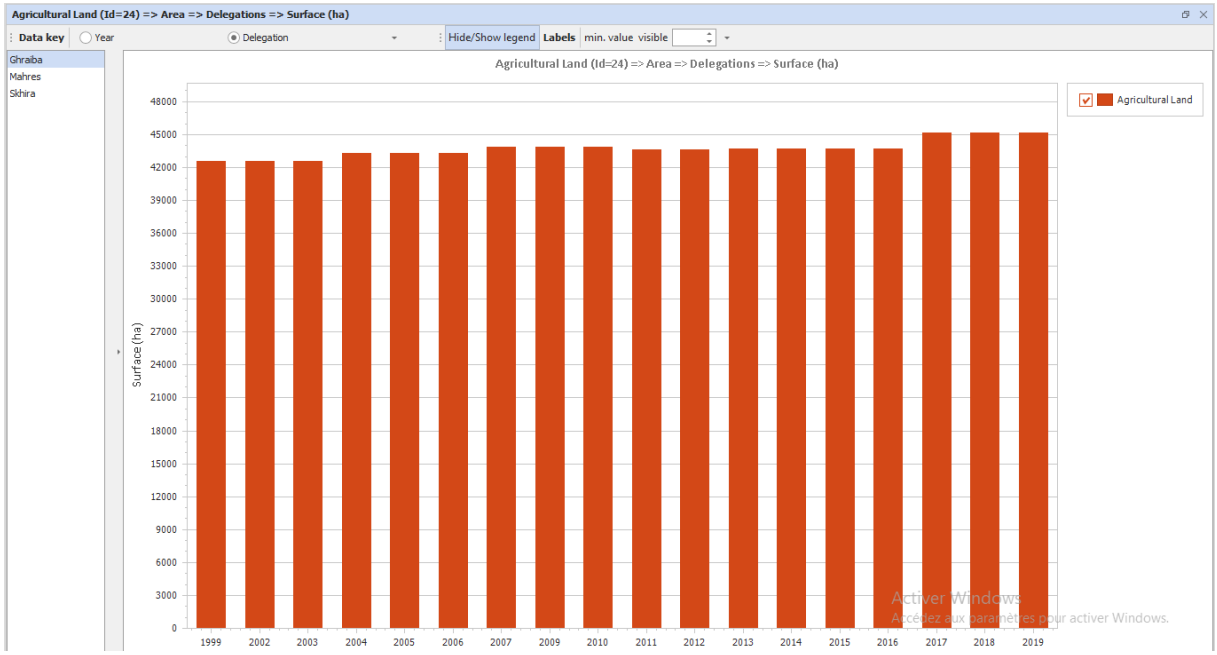
I-Agricultural Land (component)

[Agricultural Land (Id=24)]

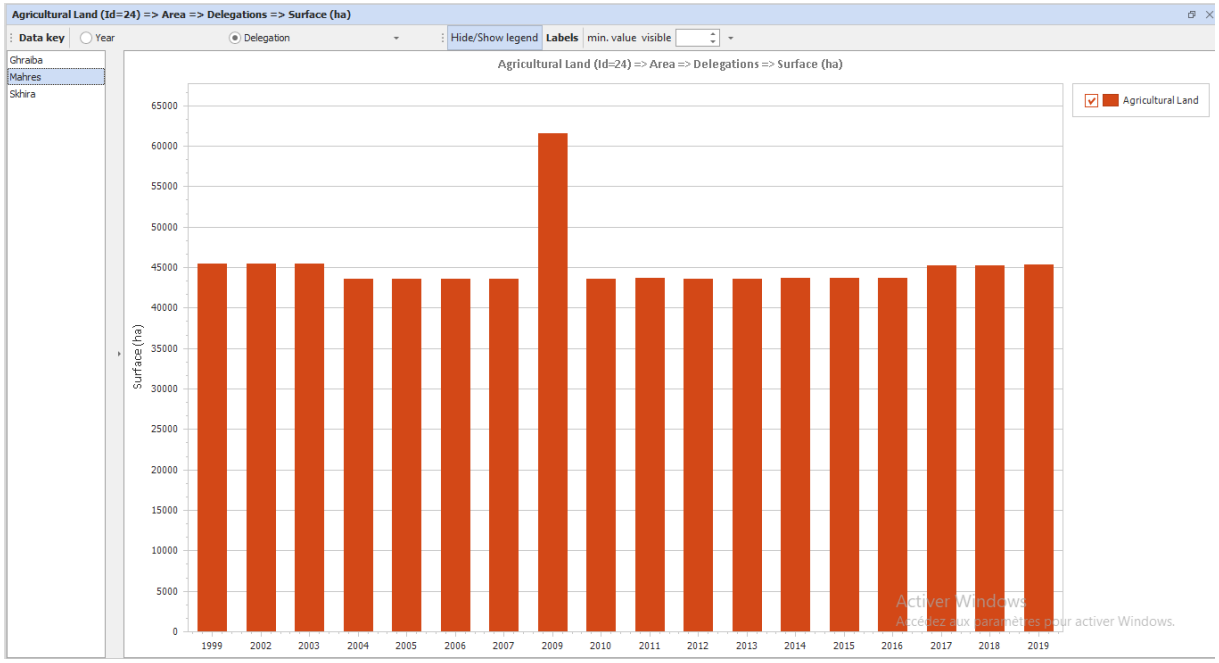
Indicators attached to component: Agricultural Land (Id=24)				
Name	**Description**	**DataSource**	**UpdateFrequency**	**Notes**
Area		CRDA	Annual	
Agricultural land (ha)		CRDA	Annual	

1-Area (indicator)

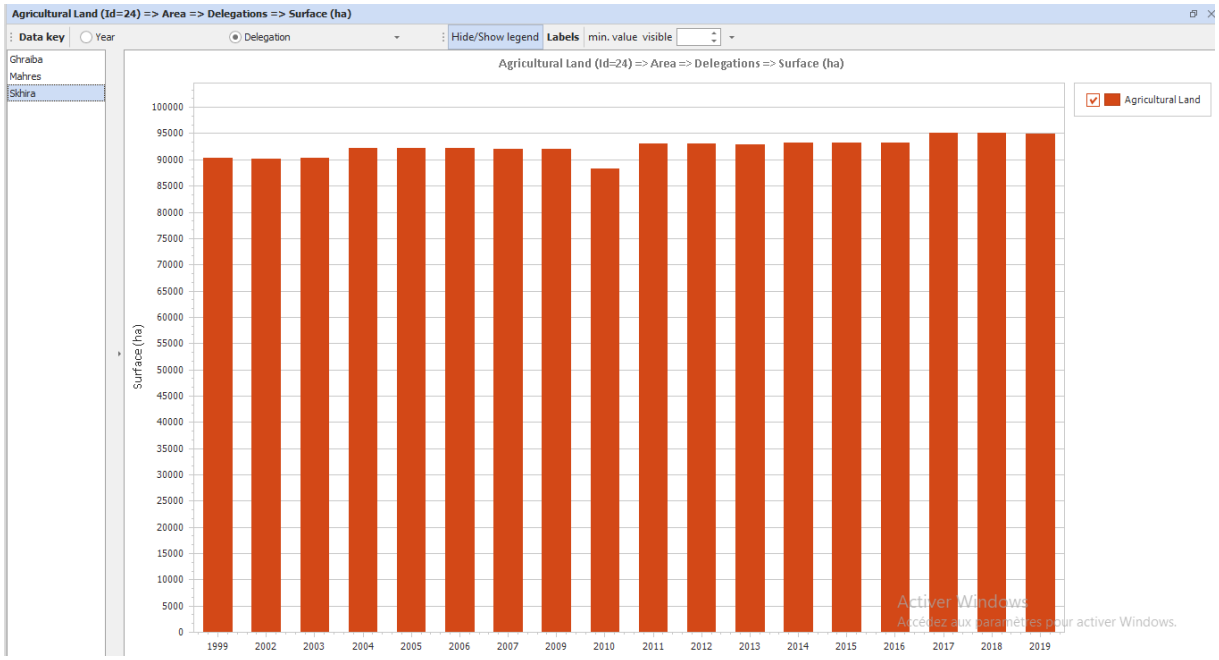
a) Ghraiba



b) Mahres



c) ***Skhira***



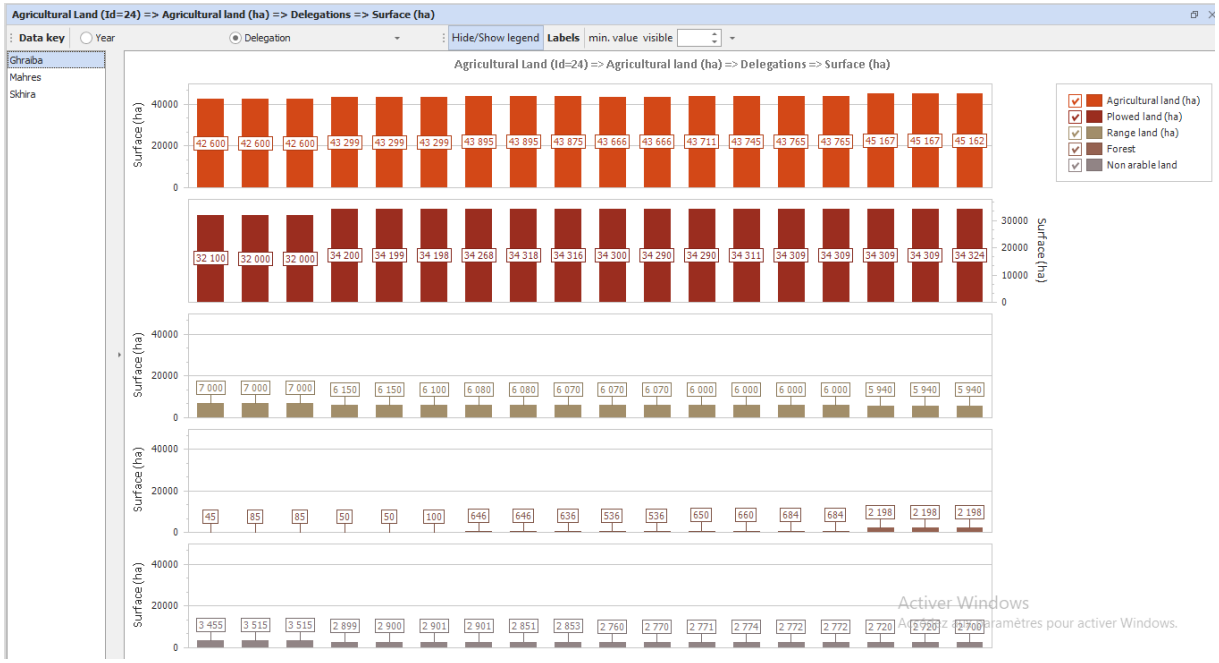
Conclusion

>In Mahres the exploited lands for agriculture are relatively stable and constant except for 2009 where it increased and then it went back to its previous value.

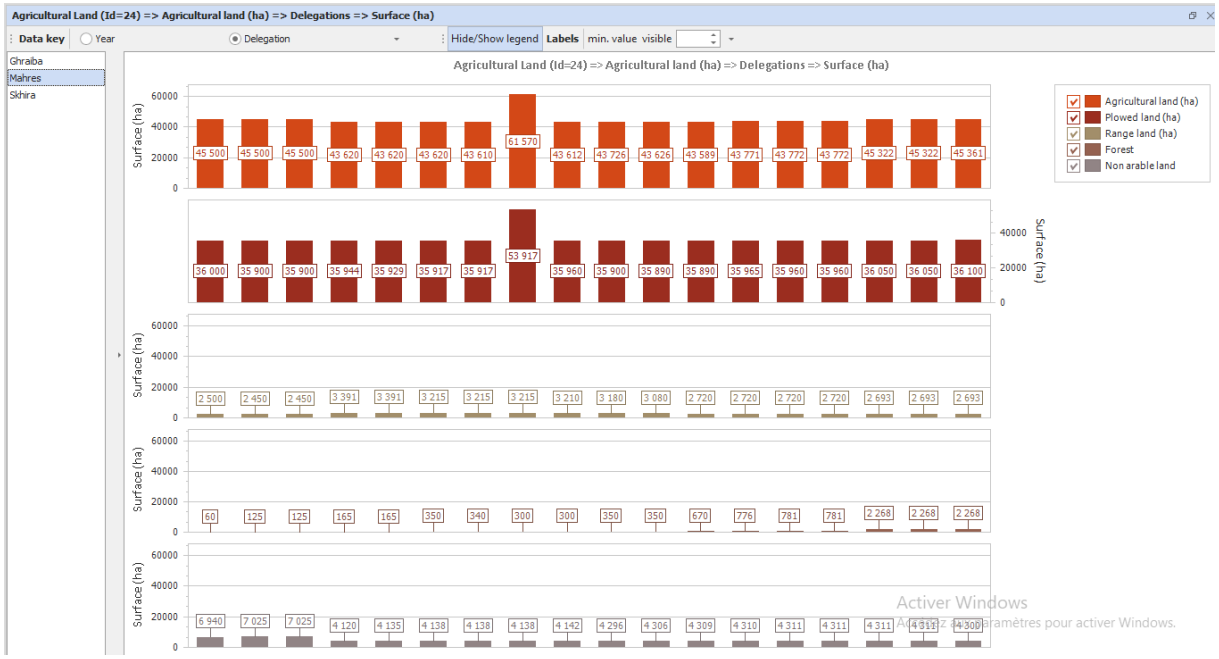
=>There maybe no stress coming from this indicator on the soil or the water resources.

2- Agricultural land (ha): Indicator

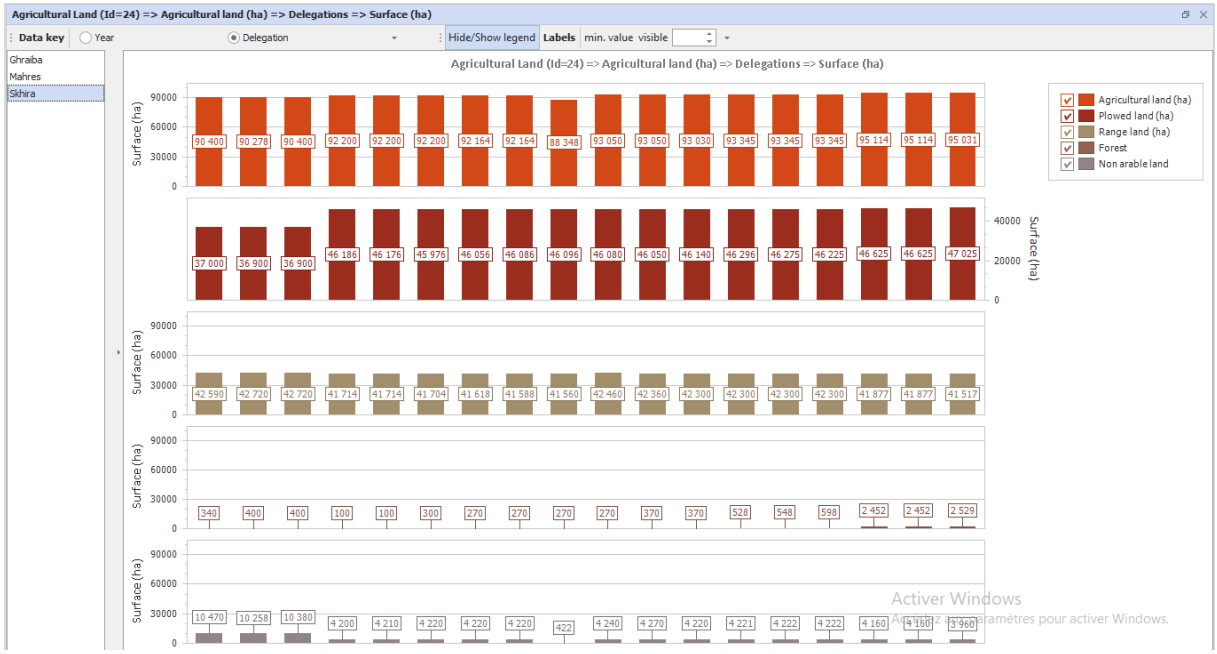
a) ***Ghraiba***



b) ***Mahres***



c) ***Skhira***



Conclusion

->The agricultural lands and the plowed lands dominated the total area in all the delegations.

->Range lands were decreasing slightly over the years.

->The forest was being restored gradually (Example: in Mahres, it increased from 45 ha to 2198 ha).

->The non-arabal lands are relatively constant and decreasing slightly over the years. In Skhira, it decreased considerably from 4220 ha to 422 ha, then, it got back to the same value.