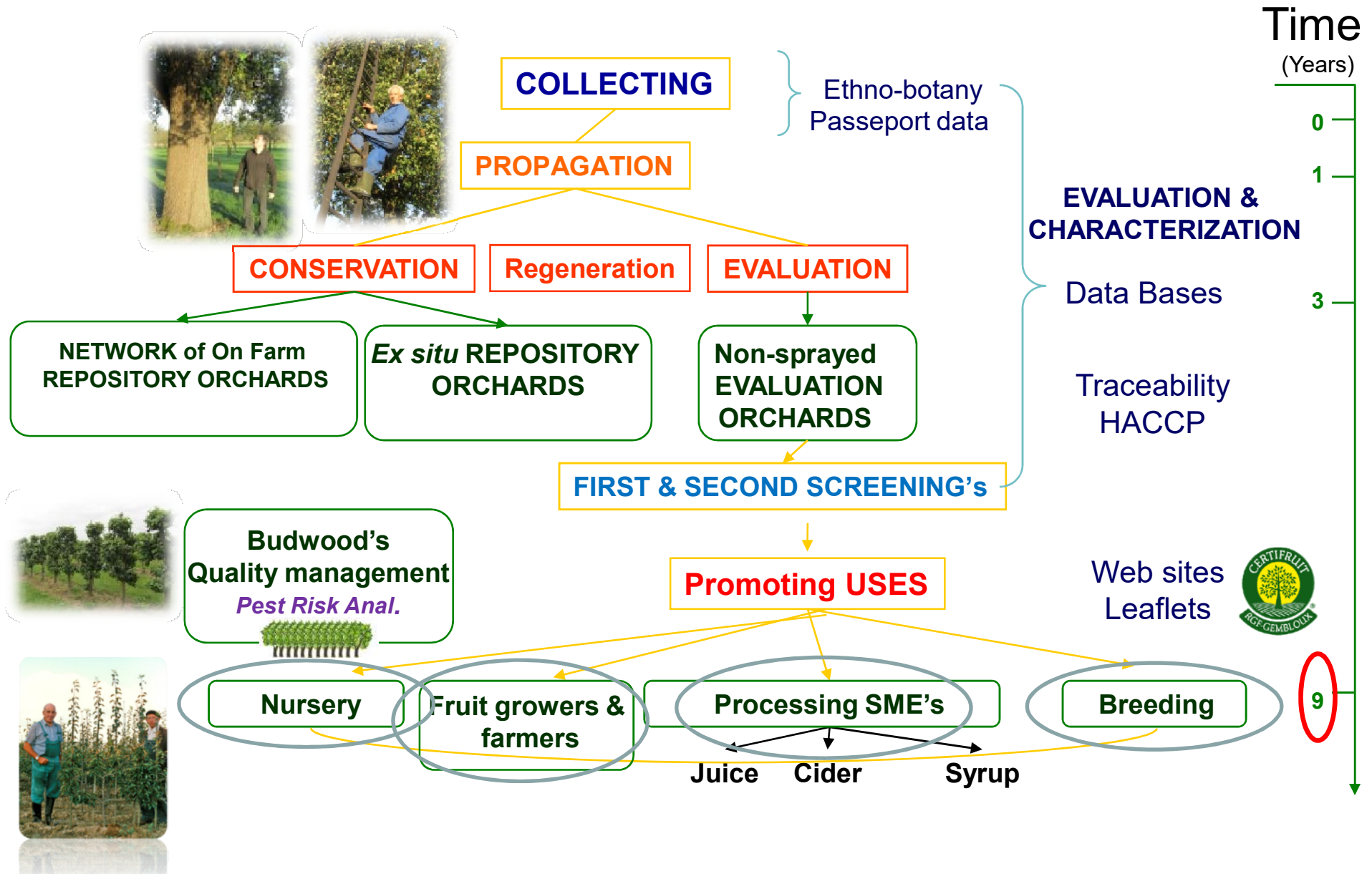




“NOVAFRUITS : an apple trans-border organic participative breeding program based on robust and disease tolerant old local cultivars”

M. Lateur, J-B Rey, T. Donis, A. Rondia, R. Stiévenard

1. Safeguarding & Promoting USES of Fruit Tree Genetic Resources



Back to the roots... many interesting traits identified in the large diversity of old cultivars through priority work of long term scientific evaluation activities.



- ⇒ **Rusticity and tolerance to abiotic stresses**
- ⇒ **Tolerance to pest and diseases**
- ⇒ **Long keeping ability without sophisticated cold systems**
- ⇒ **Large diversity of forms, colours, tastes, uses, healthy nutriment...**

Robustness, disease tolerance, capacities of adaptation, low fertilizing needs...



2. Collaborative breeding program making USES of local old cvs

Pre-breeding & Breeding using well evaluated FTGR

Definition of breeding objectives:

1. Adaptation to low input growing systems (mostly Organic)
2. Disease tolerance, robustness, resilience : combination of many minor genes + Vf
3. Broadening genetic bases using local neglected old cvs
4. Quality and originality – Dessert & processing uses
5. Better nutritional quality

Very important to make a good choice of parents:



Strategy : close trans-border collaboration



The Centre Régional de Ressources Génétiques Hauts de France - CRRG



The Centre Wallon de Recherches Agronomiques - Gembloux - CRA-W



SYNERGIES & sharing ideas, material, expertises...

Hand-Pollination - *Beefly*



2. Collaborative breeding program making USES of local old CVS

S Transborder participatory breeding programme with private growers (Organic)



Results

Network of growers for testing new cvs

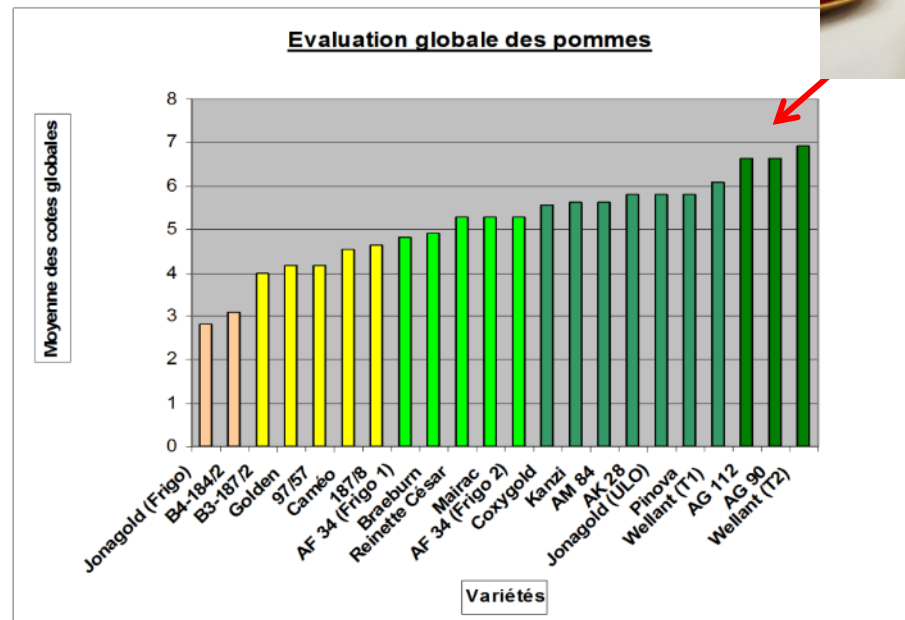


- **'Coxybelle' - AG 90**

- Combination of **Vf** gene & polygenic quantitative genes from the old cv **'Président Van Dievoet'**
- **Good size, average yield**
- **Tendency to biennial yield!**



Very good taste and aroma but variability in quality – much better quality in low input orchards!!!!
Autumn – early winter cv



Results

Selection CRA-W - AQ 84

'DUCASSE'



'Reinette Libotte' x 'Rubinola'

- Easy tree
- Type III - IV
- Low susceptibility to scab
- Fruit with high firmness & long shelf life
- Acidic/sweet
- **Very regular quality!**
- Keeping ability up to April-May in a +5°C cold chamber
- Average size = 160 - 190 g



Results

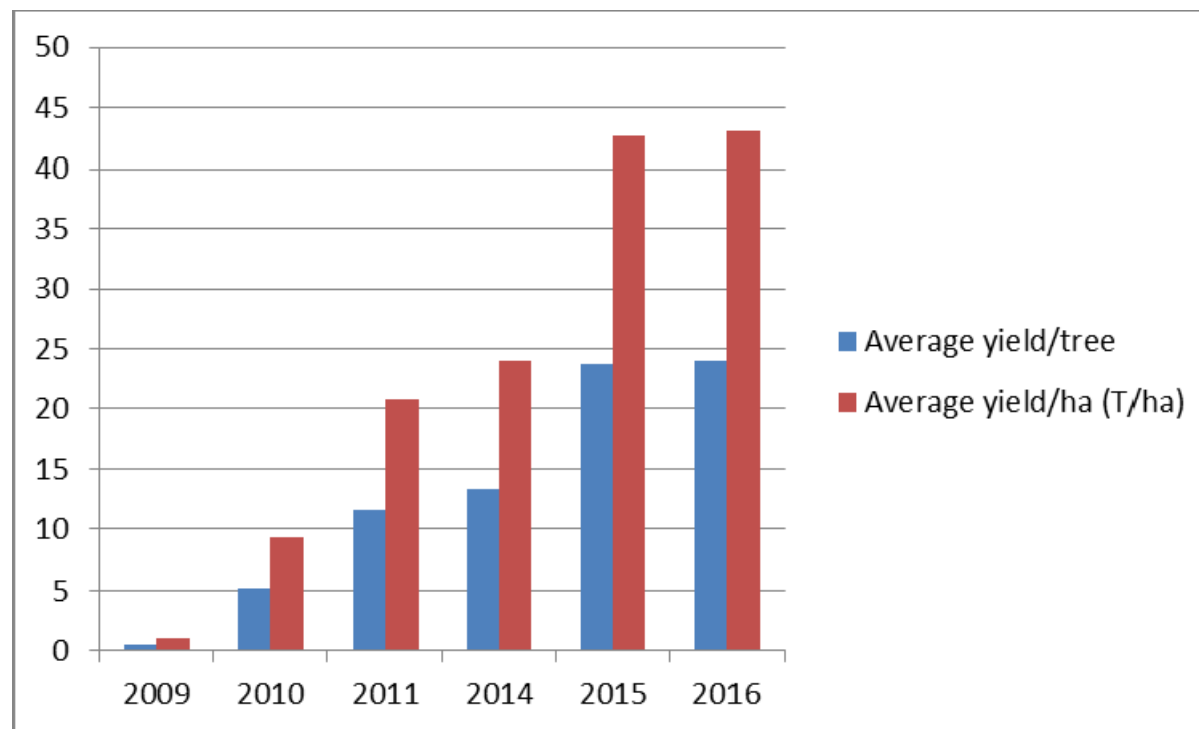
Selection CRA-W - AQ 84

'DUCASSE'



Résultats from The Netherlands

Plantation 2008 – 3,5 x 1,25 m – M 9/ Golden D. (n=5)



2. Collaborative breeding program making USES of local old CVS

Transborder participatory breeding programme with
private growers (Organic)

« NOVAFRUITS – Heritage & sharing innovation »

- Transborder participatory breeding association
- 23 organic regional growers
- 2 public Regional Institutes
- Collaboration Agreements



« NOVAFRUITS – Heritage & sharing

innovation »

7 Fruit growers founders of the association - June 2014

13 Fruit growers 2015

18 Fruit growers 2016

28 Fruit growers 2018 - Enlarging the group to Cider & Juice growers

14 from Hauts-de-France, 5 from Normandy & 5 from Wallony

« NOVAFRUITS – Heritage & sharing innovation »

A Chairman

A Steering Committee

Two types of members

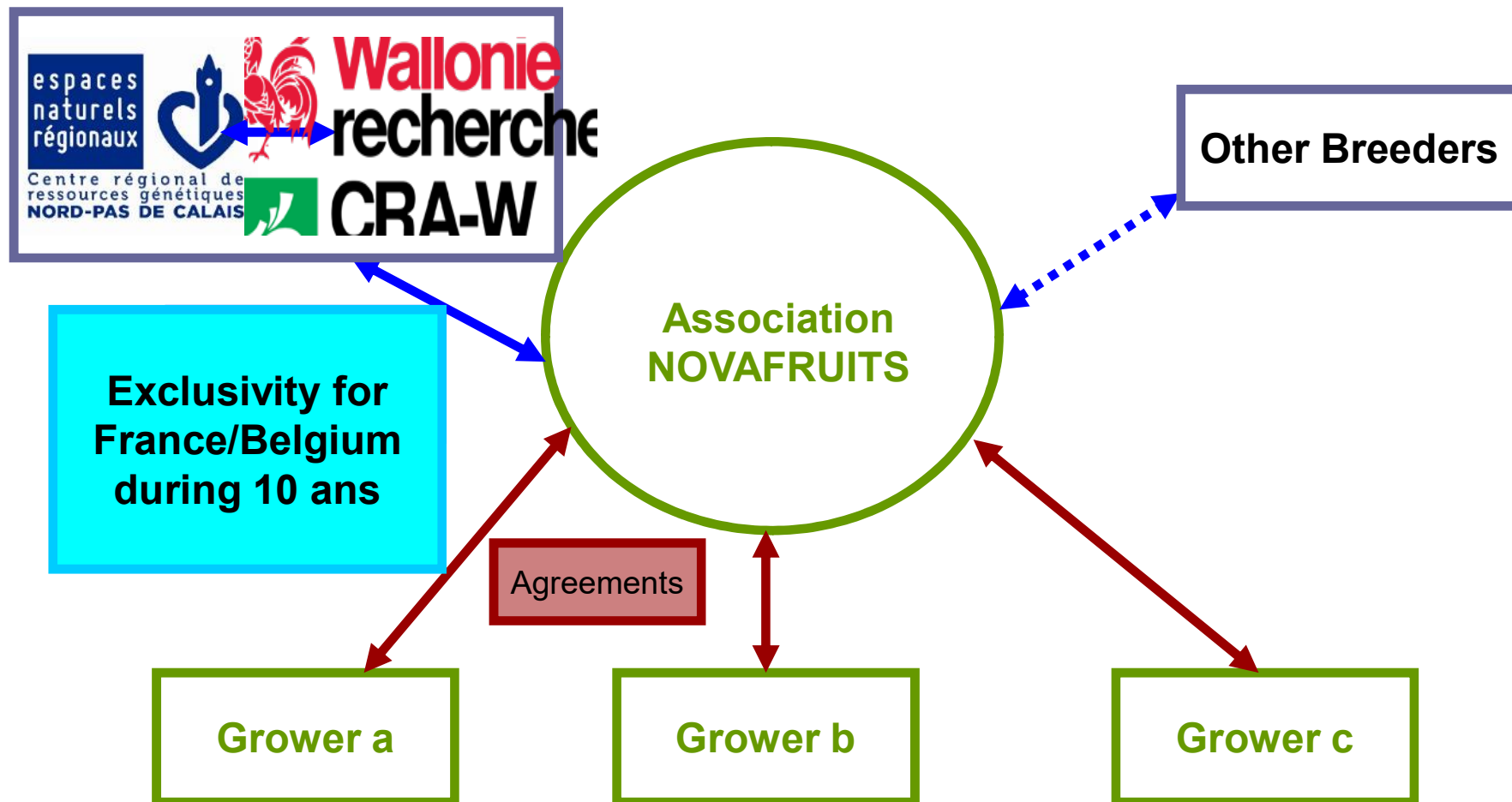
- **Growers**
- **Research Institutes + Organic Extension Services (France & Belgium)**

Administration Council :
6 Growers

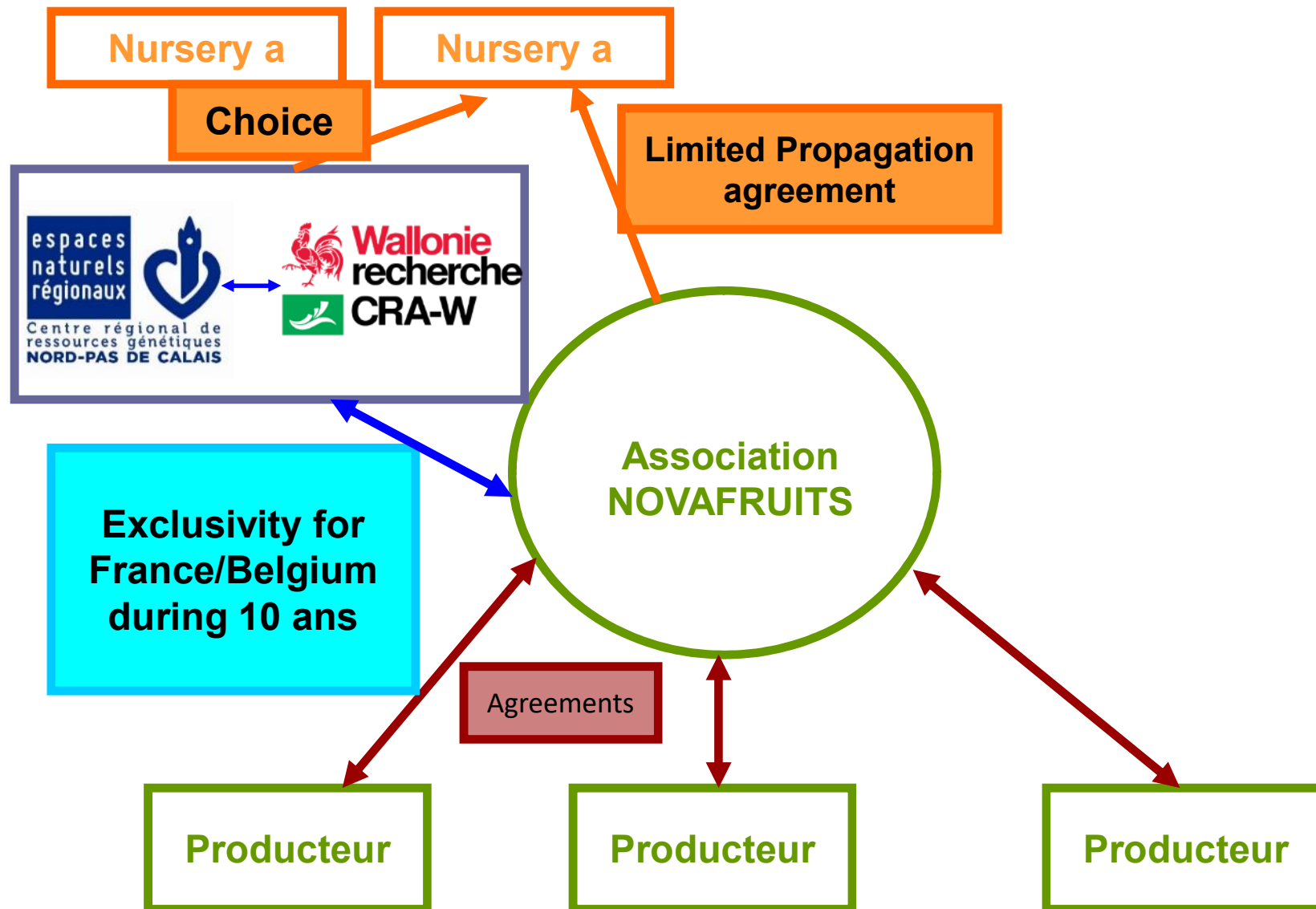
Two yearly meetings/One general assembly meeting



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« NOVAFRUITS – Heritage & sharing

innovation »
Dessert cvs

Coxybelle (AG90)



**Reinette du Héron
(124-33) - CRRG**



AQ 84 - Ducasse



« NOVAFRUITS – Heritage & sharing

innovation »

Old pear cvs to be tested :

'Madame Grégoire'



'Beurré de Naghin'



**'Beurré d'Anjou' /
'Nec plus Meuris'**



'Poire à Clément'

