“Present and Future of Agricultural Mechanization in ECUADOR”
Outline:

1. Problematic of mechanization
2. Challenges of mechanization
3. Current situation
4. Management model
5. Vision
PROBLEMATIC OF MECHANIZATION

- Limited machinery and technology adoption,
- Small-scale production
- Access to financing in its various forms (credit, leasing, factoring, etc.)
- Shortage of farm power in the rural areas
- Rural – Urban Migration
- Importation of tools, equipment and machinery of poor quality
- Generally poor technical know-how
The mechanization index recommended for developing country is from 0.75 to 1.0 Kw/ha.

Source. FAOSTAT 2004
CHALLENGES OF MECHANIZATION

TOPOGRAPHY

CLIMATE

PRODUCTIVE SYSTEMS

CULTURE

Ecuador map of Köppen climate classification
CURRENT SITUATION

• Agricultural mechanization is a key input in the agricultural sector production value chain.

• Development and promotion of mechanization have been carried out by the Government in collaboration with the private sector.

• Before the current Government the country has not operated with a clearly defined agricultural mechanization policy (individual strategies)
TRACTORS AND MINI ROTAVATOR

BNF CREDIT 1942 mini rotavators and 92 tractors

Investment: USD 3,600,000
MECHANIZATION CENTERS

55 Mechanization centers

Investment: USD 4.800.000
<table>
<thead>
<tr>
<th>Province</th>
<th>Number of Mechanization Centers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotopaxi</td>
<td>10</td>
</tr>
<tr>
<td>Tungurahua</td>
<td>12</td>
</tr>
<tr>
<td>Chimborazo</td>
<td>13</td>
</tr>
<tr>
<td>Bolívar</td>
<td>10</td>
</tr>
<tr>
<td>Cañar</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
</tr>
</tbody>
</table>
# MECHANIZATION OF CANGAHUA

## HECTARES AND PRODUCERS BENEFIT

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>PLACE</th>
<th>Number of Producers</th>
<th>Number of hectares mechanized</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARCHI</td>
<td>BOLIVAR</td>
<td>310</td>
<td>414,00</td>
</tr>
<tr>
<td></td>
<td>MIRA</td>
<td>220</td>
<td>330,60</td>
</tr>
<tr>
<td>IMBABURA</td>
<td>PIMAMPIRO</td>
<td>229</td>
<td>289,18</td>
</tr>
<tr>
<td>PICHINCHA</td>
<td>CAYAMBE</td>
<td>1,175</td>
<td>434,82</td>
</tr>
<tr>
<td></td>
<td>P.MONCAYO</td>
<td>968</td>
<td>564,55</td>
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<tr>
<td>COTOPAXI</td>
<td>PUJILÍ</td>
<td>393</td>
<td>216,00</td>
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<tr>
<td>TUNGURAHUA</td>
<td>AMBATO</td>
<td>310</td>
<td>295,44</td>
</tr>
<tr>
<td>CHIMBORAZO</td>
<td>PUNÍN</td>
<td>1,713</td>
<td>391,20</td>
</tr>
<tr>
<td></td>
<td>CHAMBO</td>
<td>1,353</td>
<td>775,70</td>
</tr>
</tbody>
</table>

| Total        |               | 6,671,00            | 3,710,95                     |

Investment: USD 5,400,000
QUINUA: INTERVENTION PLAN

QUINUA PRODUCTIVITY IMPROVEMENT

LOW PRODUCTIVITY
Deficit of certified seed
Low level of Nutrition
Low mechanization
Poor technical know how
Climate risk

- Certified Seeds
- Agricultural supplies: Fertilizers and pesticides
- Mechanization
- Technological transfer
- Crop insurance
MECHANIZACIÓN

PROBLEM

DEFICIT OF AGRICULTURAL MACHINERY

STRATEGY

DELIVERY OF AGRICULTURAL MACHINERY TO AGRICULTURAL PROVINCE UNITS (DPA)

<table>
<thead>
<tr>
<th>Machinery and equipment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeders</td>
<td>200</td>
</tr>
<tr>
<td>Electrostatic pumps</td>
<td>720</td>
</tr>
<tr>
<td>Tresher</td>
<td>45</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>965,00</strong></td>
</tr>
</tbody>
</table>
CROP INSURANCE

### PROYECTO AGROSEGURU

**SUBVENCION 60% SEGUR AGRICOLA**

ENERO - AGOSTO 2014 ASEGURÓ A 71.806 PRODUCTORES

<table>
<thead>
<tr>
<th>AÑO</th>
<th>PÓLIZAS</th>
<th>HAS</th>
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<tbody>
<tr>
<td>2015</td>
<td>1.339,00</td>
<td>2.715,00</td>
</tr>
<tr>
<td>2016</td>
<td>260,00</td>
<td>510,56</td>
</tr>
<tr>
<td></td>
<td><strong>TOTALES</strong></td>
<td><strong>3.225,56</strong></td>
</tr>
</tbody>
</table>

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**Segur agricola**

El Gobierno Nacional subsidia el 60% del valor de la póliza.
QUINUA PRODUCTIVITY

PRODUCCIÓN (TM.)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCCIÓN (TM.)</td>
<td>995</td>
<td>1162</td>
<td>1424</td>
<td>1453</td>
<td>1802</td>
<td>7641</td>
<td>11681</td>
</tr>
<tr>
<td>SUPERFICIE (Has)</td>
<td>1363</td>
<td>1529</td>
<td>2225</td>
<td>2270</td>
<td>2574</td>
<td>7010</td>
<td>7440</td>
</tr>
</tbody>
</table>

PRODUCTIVITY (TM/Ha)

Fuente: MAGAP
2 AUTOGYRO: Aerial fumigation in banana plantations

Investment: USD 219,000

MAGAP request a reform of the Ecuadorian civil aviation regulations
MANAGEMENT MODEL - ASSOCIATIVITY

ACCESS TO AGRICULTURAL MACHINERY ASSOCIATIVE CREDIT LINE

ASSOCIATION BENEFICIARIES

MAGAP-FIPRO-BANECUADOR

INCENTIVE FOR THE ACQUISITION

• FLEXIBLE CREDIT LINE
• ACCESABILITY
• INTEREST RATE 9%
• 10 YEARS CREDIT TERM
• TWO YEARS OF GRACE PERIOD
• STATE SUBSIDY FOR MACHINERY INSURANCE

TRAINNING INSTITUTIONS
PUBLIC AND PRIVATE

• Accessible cost
• Good service delivery
• Trained operatives
• Equipment in good condition
• Governance

TRAINNING INSTITUTIONS
PUBLIC AND PRIVATE

MICRO ENTERPRISE

MAGAP Technician

Advise and monitoring

Private company Technician

Enterprise Administrator

General Administrator

Directive Board

General Board

PRODUCERS

Service Provider

Operator

Enterprise Administrator

General Administrative Conditions
VISION

Contribute to increasing the productivity of agricultural and livestock systems, facilitating access to machinery and equipment to promote the use of farm resources in order to optimize the use of labor giving priority to small and medium producers with a view to improving the living conditions of the rural population.
FACILITATE ACCESS OF SMALL FARMERS TO MACHINERY AND EQUIPMENTS THAT BEST SUIT THEIR NEEDS

PUBLIC POLICIES

Under Secretary of Agriculture through the Agricultural Mechanization Management Unit

ASSOCIATIVE PRODUCTION SYSTEM

SCOPE OF AGRICULTURAL MECHANIZATION POLICY

SOIL PREPARATION

SOWING

FERTILIZATION

TENDING

WEED CONTROL AND PLANT PROTECTION

HARVEST
SCOPE OF AGRICULTURAL MECHANIZATION POLICY

Arrange meeting spaces public-private actors, Advisory Board Mechanization (Companies, universities, producers).

Propose and implement regulations for agricultural mechanization: import; rates, tax (SRI), organizational (SEPS), other

Create incentives and benefits: subsidies, credit, training and technical assistance.

Promote professionalization and specialization of operators (training centers, universities).
THANKS!!!