# *Budget process linked to partial indicators in dairy sheep farm*

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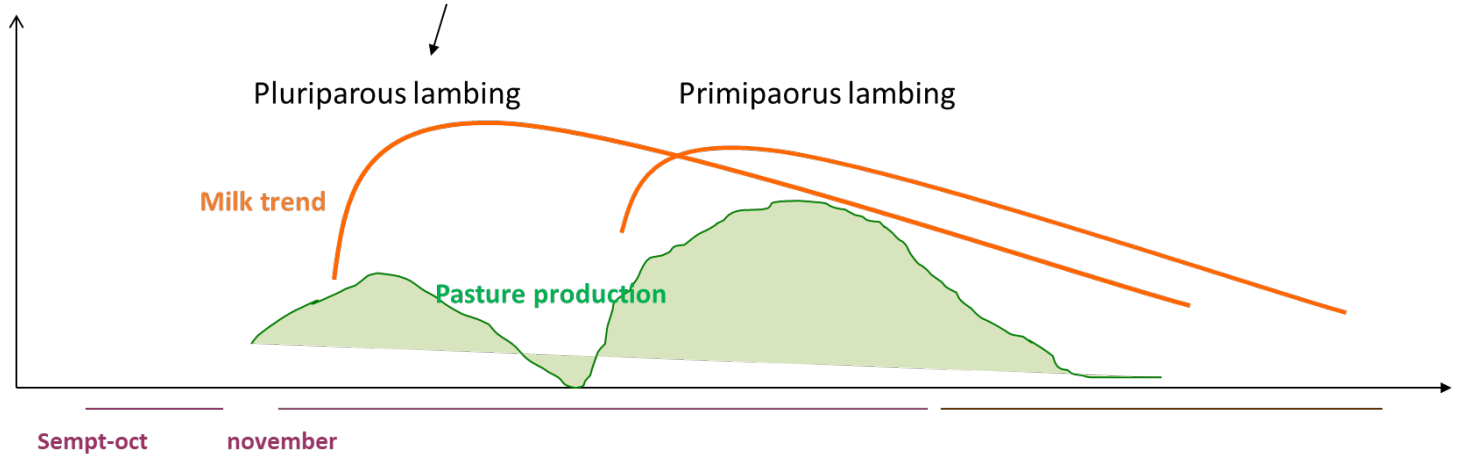
*This abstract and related research have been conducted during and with the support of the Italian national inter-university PhD course in Sustainable Development and Climate change (link: www.phd-sdc.it).*
*This study was carried out within the Agritech National Research Center and received funding from the European Union Next-GenerationEU (PIANO NAZIONALE DI RIPRESA E RESILIENZA (PNRR)–MISSIONE 4 COMPONENTE 2, INVESTIMENTO 1.4– D.D. 1032 17/06/2022, CN00000022). This manuscript reflects only the authors' views and opinions, neither the European Union nor the European Commission can be considered responsible for them.*

# Introduction: dairy sheep farm and partial Indicators

- Seasonal production, 2 months without milk production and revenues (sept-oct);
- Revenues from November to February  from milk and lamb slaughtered;




Most common partial Indicators

- FE, Feed Efficiency (Pepin, 2009): Milk yield (l)/ Dry matter intake (kg),
- IOFC, Income Over Feed Cost (Prat & White, 1930): Milk revenue – feed cost,
- IEFC, Income Equal Feed Cost (Pepin, 2009): Feed cost (€/d) / milk price(€/l),

**↑ technical efficiency ≠ ↑ profits (St-Pierre, 2001)**

# Difference between profit and cashflow

Partial indicators are only **economic** and **partially** related to farm profit

## Economic ≠ Cashflow*

**Profit**

**Cost and Revenue**

**Cashfow**

**Money inflow and outflow**

***"Revenue is vanity, Profit is sanity, Cash is reality"***

**(Harvard Business School, 2020)*

# The role of budget in a company

- Covid 2019 causes  a shock dairy milk demand (Acosta et al. 2021; Vidaurreta, 2020)
- Budget is:
  - A plan for the achievement of strategic goals, exspecial in time of crisis and instability (Bechker et al., 2016)
  - A program, **not a forecast** of cashflow and economic side linked to technical choices (Marchi et al, 2018)

**Without budget**

**With Budget**

## Process (Anthony, 1965)

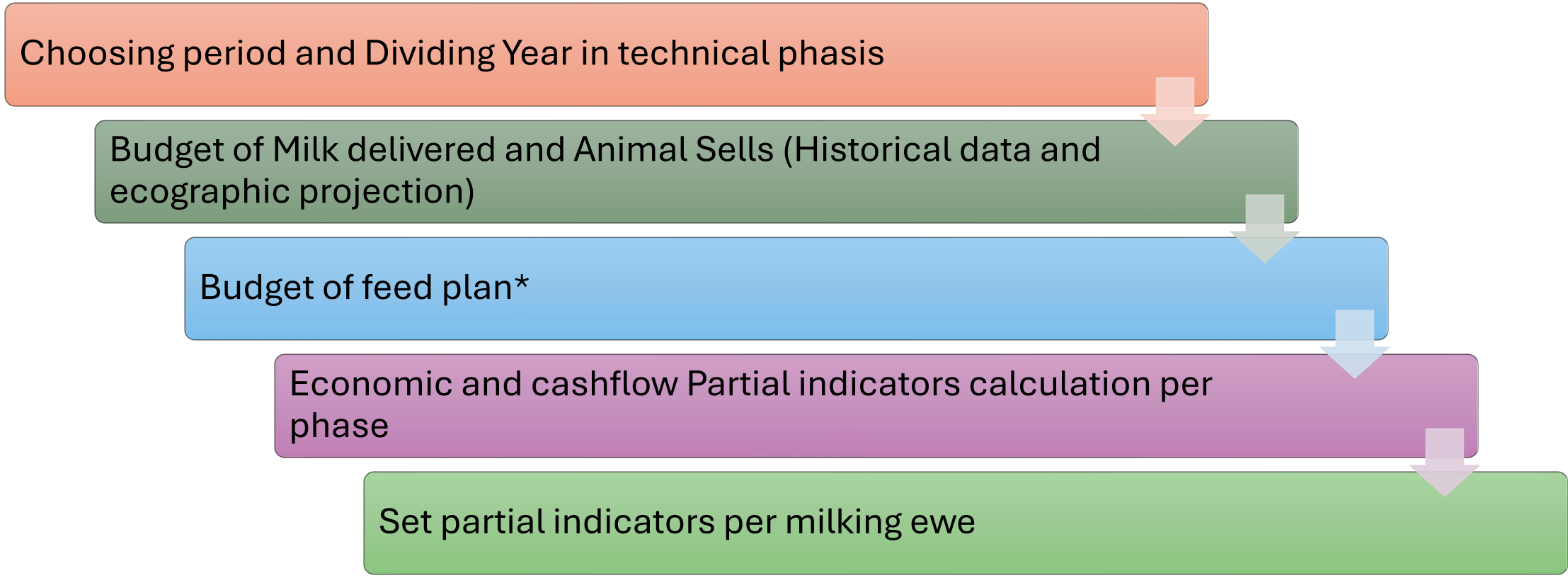
| | Planning | Program | Control |
|---|---|---|---|
| **Time** | • > 1 year | • < 1 year | • Periodically |
| **Output** | • Business plan | • Budget | • Variance analysis |

# Objective

Develop a budget process linked to partial indicators useful in dairy sheep farm decision-making process

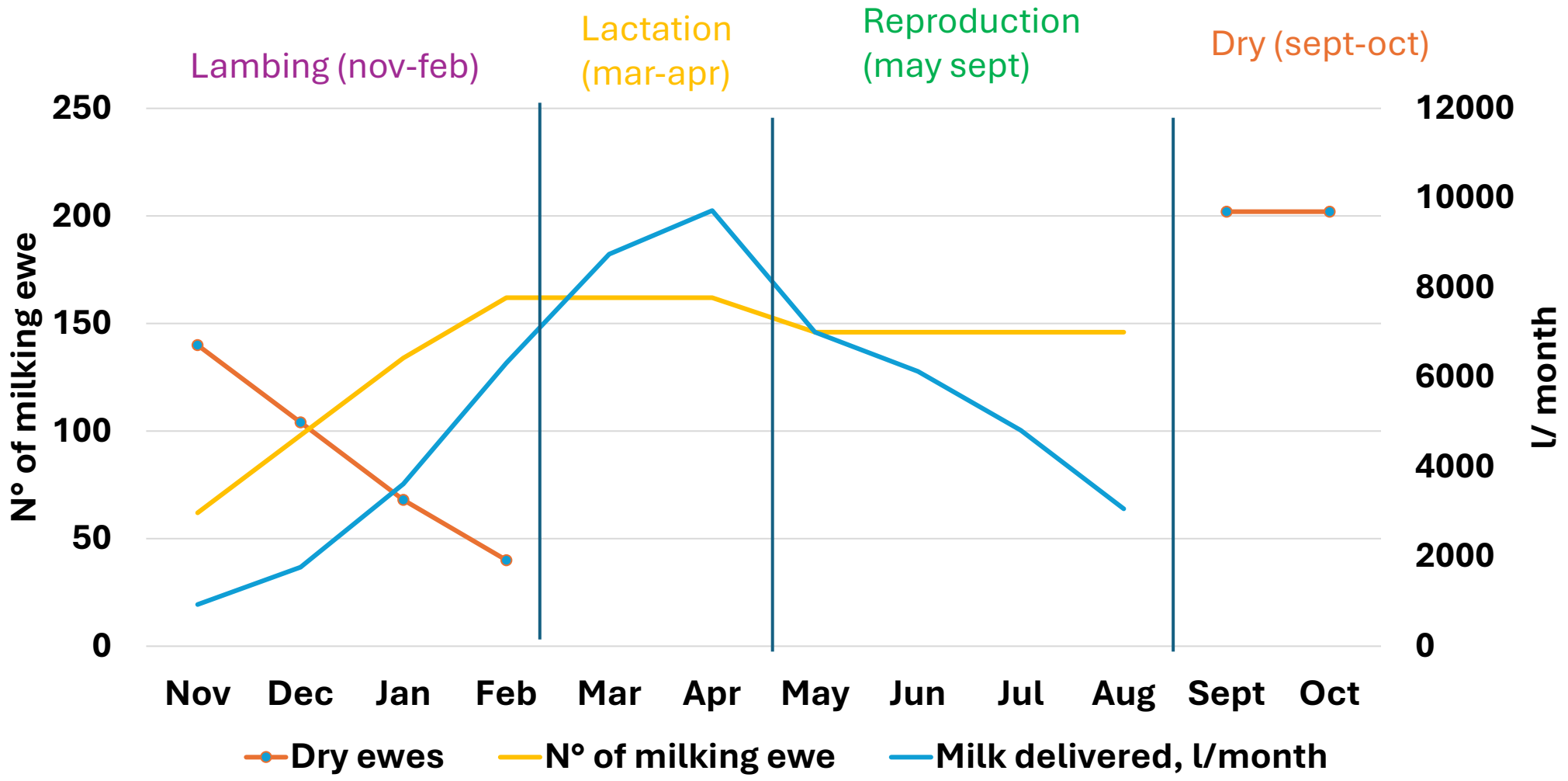
# Materials and Methods: Budget step

Sardinian North Dairy sheep farm 154 milking ewes
Simplified budget that includes only feed cost, milk and meat revenues




*Pasture Dry Matter Intake (DMI): DMI extimated (Pulina et al, 2013) – DM delivered
,Self produced feed considered at current market price

# Matherials and methods: Selecting period and dividing the year in tecnical phasis



# Matherials and methods: Partial indicators calculation

Both calculation included the contribution of ewe and lamb sells (meat sales)

IOFC:

- Economic IOFC = Milk revenues + meat revenues – Feed cost
- Cashfow IOFC = Milk inflow* + meat inflow – Feed Outflow

IEFC:

- Economic IEFC = ( Feed cost - meat revenues)/ milk final price (€/l)
- Cashfow IEFC = ( Feed otflow - meat inflow)/ milk base price (€/l)

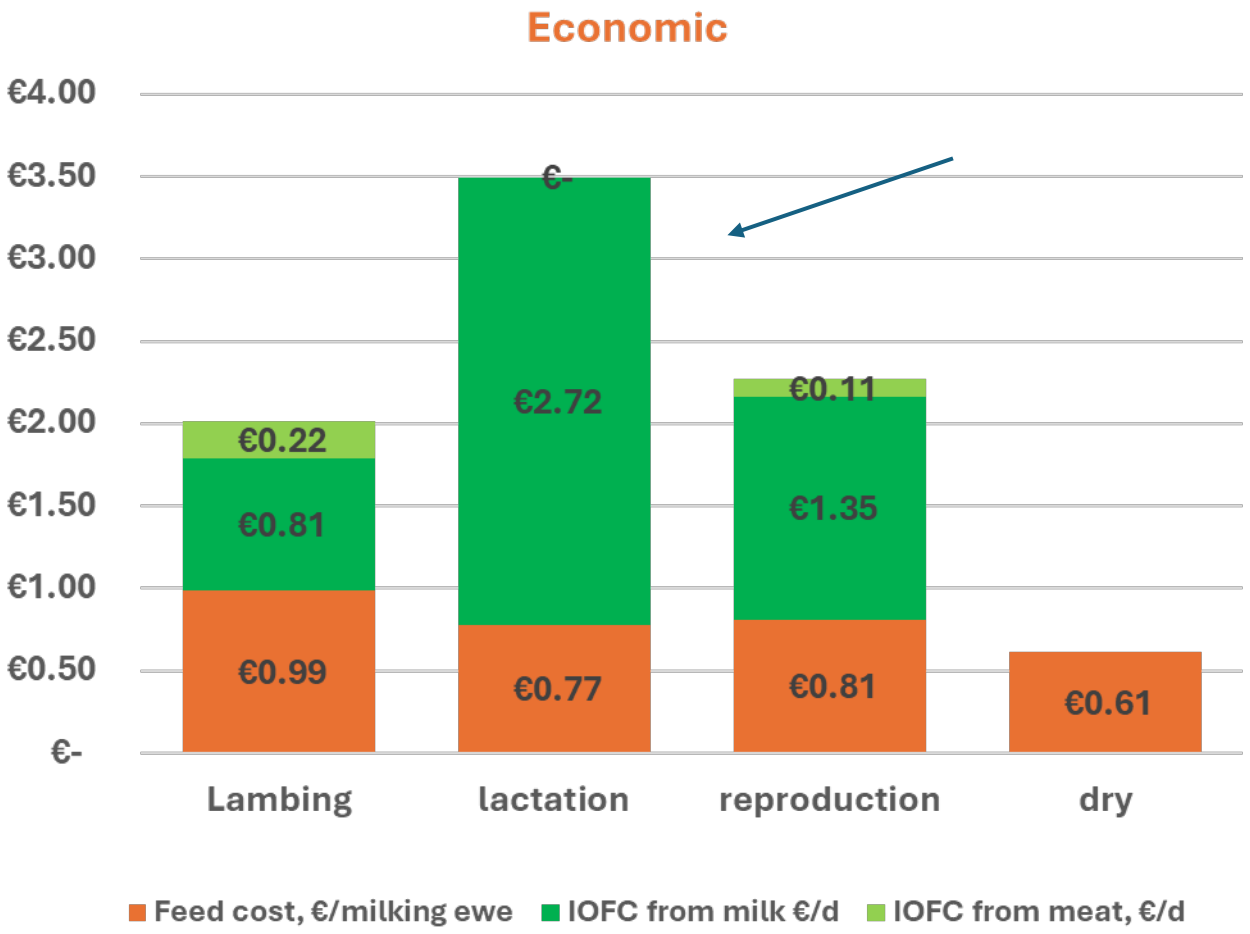
These were calculated per milking ewe and group

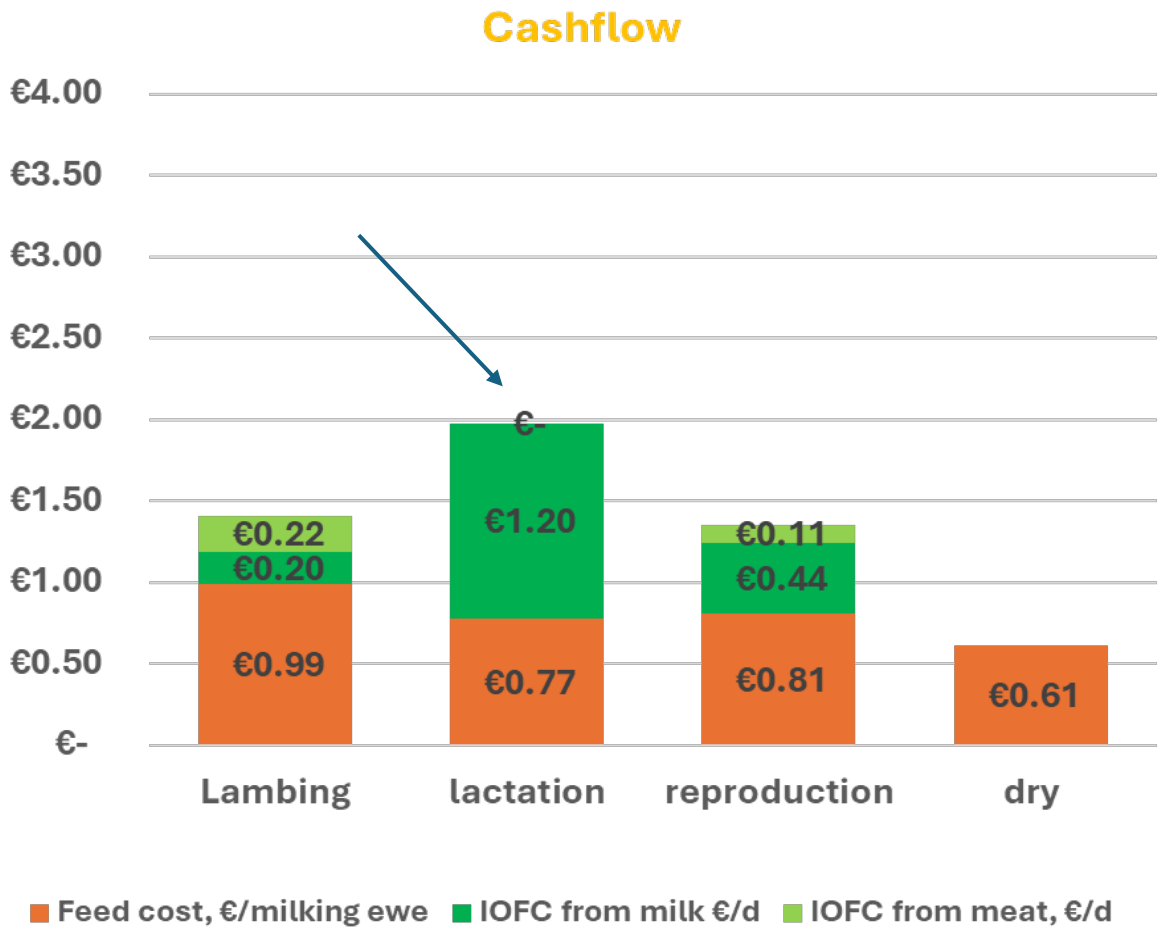
*Milk base price 0.90 €/l (monthly payment), final price at 1.75 €/l,
Difference from final price, (0.85 €/l) payed in October 2025

# Result: Economic and partial indicators per phasis

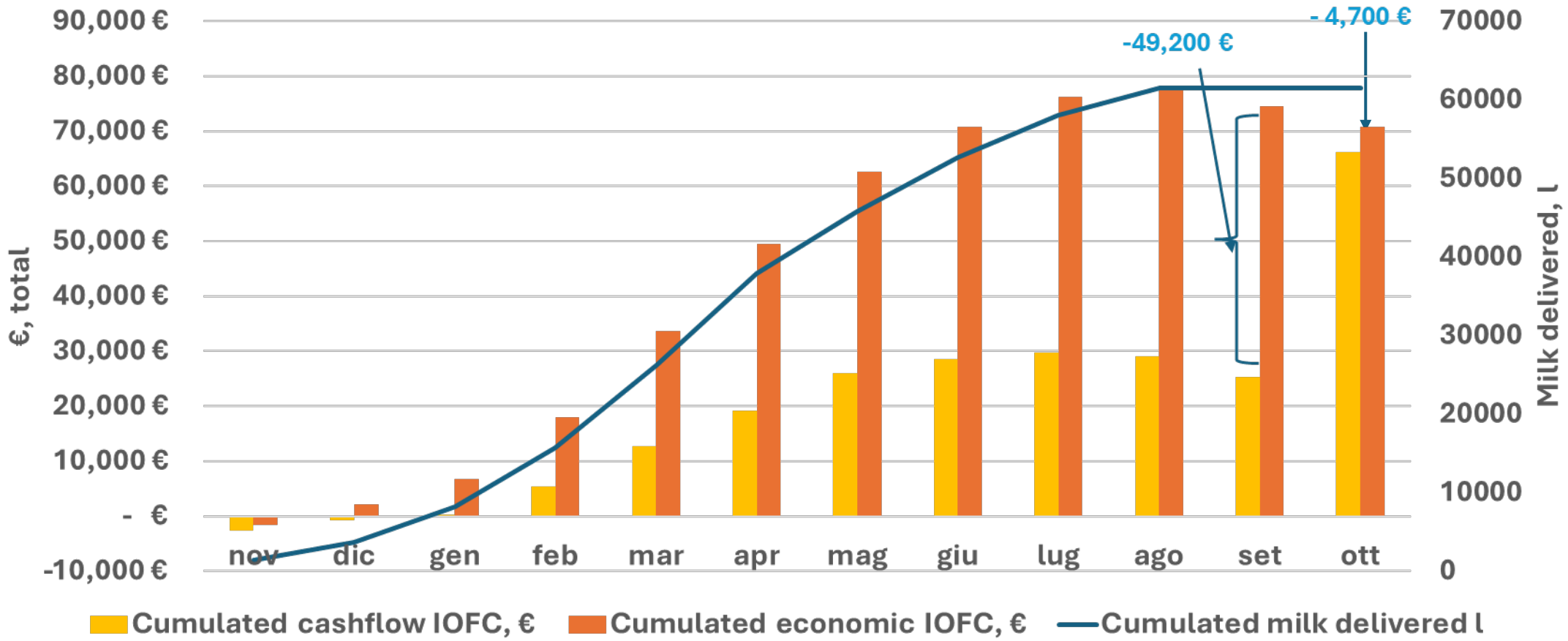
| Economic | Lambing | | lactation | | reproduction | | dry | |
|---|---|---|---|---|---|---|---|---|
| N° of month | 4 | | 2 | | 4 | | 2 | |
| Avg n° of milking ewe | 146 | | 194 | | 164 | | | |
| N°of dry ewes | | | | | | | 202 | |
| | Economic | Cashflow | Economic | Cashflow | Economic | Cashflow | Economic | Cashflow |
| **Revenues from milk, €/phase** | 27,594 € | 14,980 € | 38,703 € | 21,010 € | 41,328 € | 22,435 € | - € | 44,491 € |
| **Inflow from meat, €/phase** | 9,490 € | 9,490 € | - € | - € | 3,300 € | 3,300 € | 0 | - € |
| **Total revenues, €/phase** | 37,084 € | 24,470 € | 38,703 € | 21,010 € | 44,628 € | 25,735 € | - € | 44,491 € |
| **Feed cost, €/phase** | 17,220 € | 17,220 € | 9,013 € | 9,013 € | 15,909 € | 15,909 € | 7,431 € | 7,431 € |
| **IOFC + meat, €/phase** | 19,864 € | 7,250 € | 29,690 € | 11,997 € | 28,719 € | 9,826 € | - 7,431 € | - 44,491 € |
| **IEFC** | 4417 | 8589 | 5151 | 10015 | 7205 | 14010 | 4246 | 8256 |

# Results: partial indicators per milking ewes

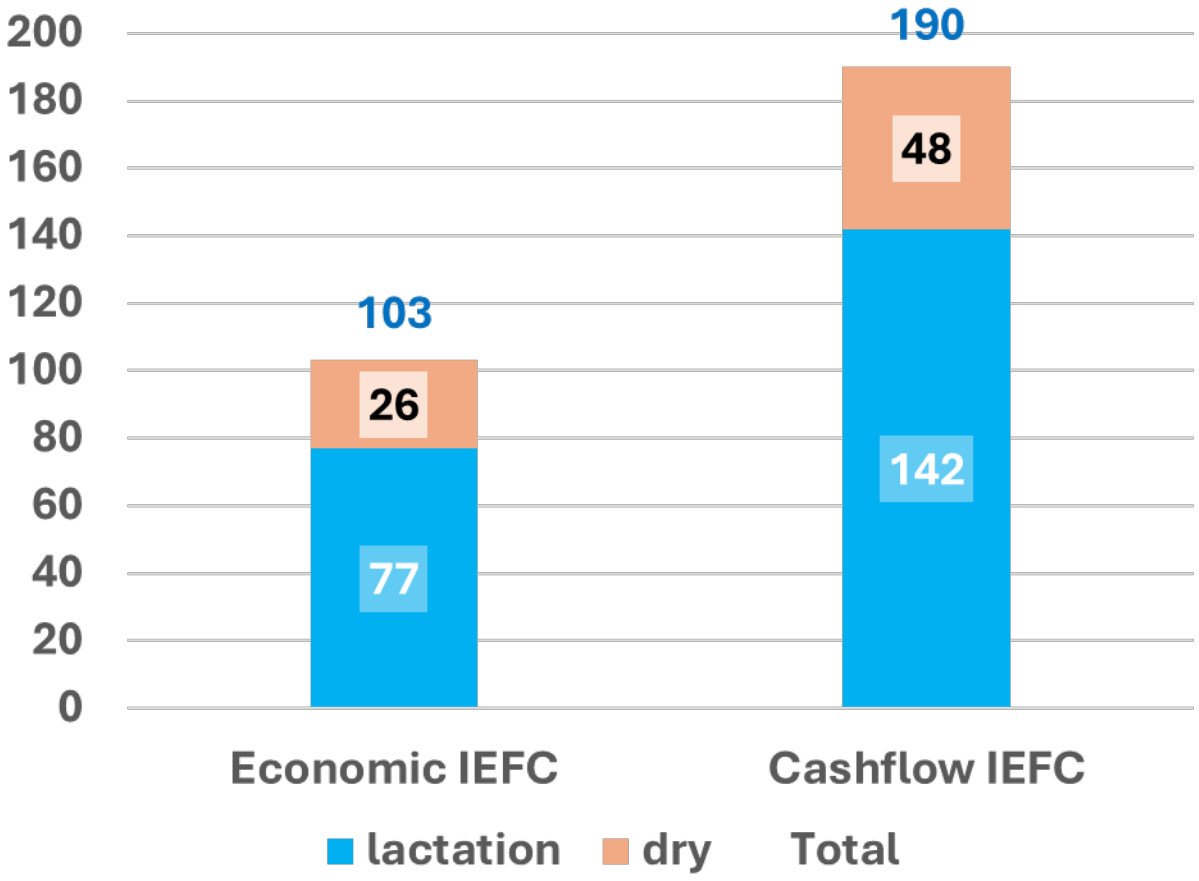


# Results: Cumulated IOFC and milk delivered



# Results: Yearly indicators per milking ewe, yearly




| | €/year |
|---|---|
| Economic IOFC | 436 € |
| Cashflow IOFC | 133 € |

## Conclusion

- Partial indicator are important to link tecnical economic and cashflow aspect
- Budget process could be used in dairy sheep farm and is important to focus and divide technical phasis

## Future implementations

- Budget will be checked in order to control and learn that were programmed
- It will require more focus on the tecnical aspect such as fertiliy
- More focus on pasture extimation

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# Thank you!
# Question?

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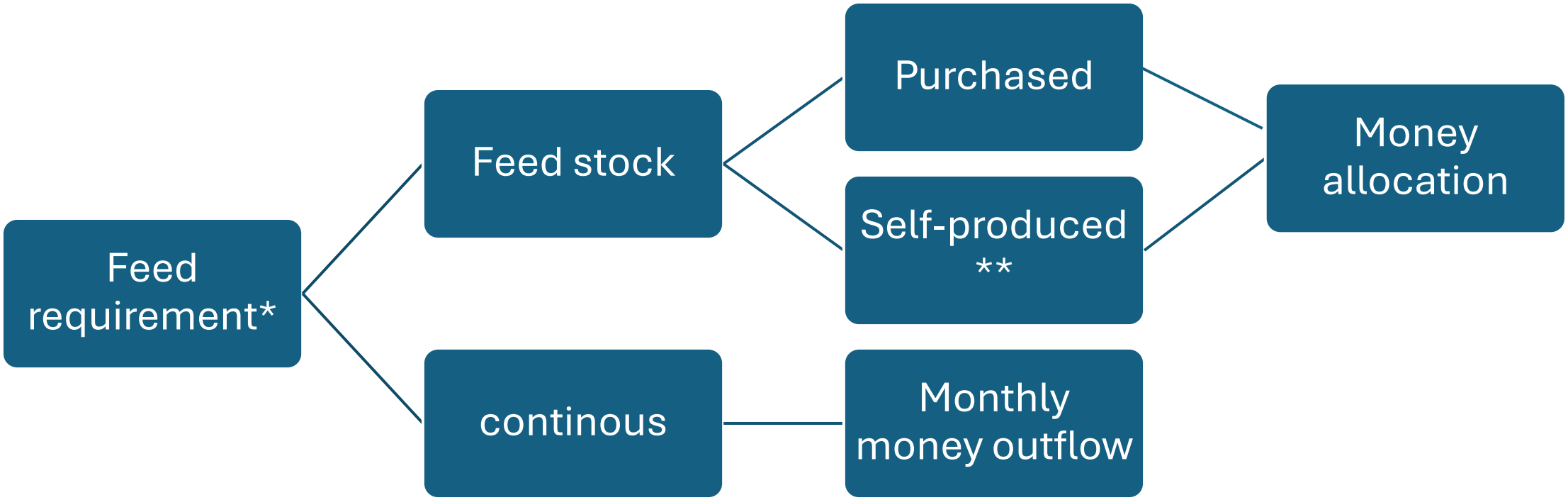
# Matherials and methods: budget scheme, cashflow

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**Self produced feed considered at current market price

# Results: feed cost/outflow repartition