***Key Factors Influencing Cost of PPR Vaccination per small animal.***

1. Channel: Public vaccination campaigns often have higher operational costs (due to logistics and personnel), while private channels may have lower but potentially more variable costs.
2. Logistics and Personnel: The cost of delivering the vaccine to the field and paying for personnel time are major components of the total cost per vaccinated animal.
3. Location and System: Costs vary between pastoral and agropastoral systems due to differences in delivery methods and farmer involvement.
4. Economies of Scale: Very large vaccination campaigns can achieve lower per-animal costs, as seen in Somalia.
5. Vaccine Wastage: Inefficient practices, leading to wasted vaccine doses, can increase the overall cost per effective vaccination.

The cost of PPR vaccines per animal varies significantly across African countries and even within them, with reported values for a single dose ranging from approximately ***$0.06 to $0.3 per animal for the vaccine itself***, and ***overall vaccination service costs per animal reaching around $0.18 to $2.00***. Factors such as public vs. private channels, location (pastoral vs. agropastoral), the cost of personnel and logistics, and economies of scale in large vaccination campaigns greatly influence the final price per vaccinated animal.

Reported Vaccination Costs (per animal)

|  |  |  |
| --- | --- | --- |
|  | Lower range | Upper range |
| Burkina Faso: | ≈ $0.18 via private channels | ≈ $0.30 (public channel) |
| Nigeria: | ≈ $0.22 |  |
| Ethiopia: | ≈ $0.10 | ≈ $0.10 |
| Somalia: | ≈ $0.12 + ≈ $0.14 (service cost per animal) |  |
| Ghana: | ≈ $0.61 | ≈ $0.65 |
| Mali: | ≈ $2.00 | Varied based on region and difficulty to reach the area |
| Senegal: | ≈ $0.19 | ≈ $0.33 |
|  |  |  |
|  |  |  |

**Breakdown with references: Reported Vaccination Costs per Animal**

Ethiopia

Vaccination cost per animal:

Mixed-crop system: ~3 ETB ≈ USD 0.10 (0.13 using time value of money & inflation calculator between 2018 (base) and 2025 (current)).

Pastoral system: ~6 ETB ≈ USD 0.20 (0.26 using time value of moey & inflation calculator between 2018 (base) and 2025 (current)).

Lyons NA, Jemberu WT, Chaka H, Salt JS, Rushton J. Field-derived estimates of costs for Peste des Petits Ruminants vaccination in Ethiopia. Prev Vet Med. 2019 Feb 1;163:37-43. doi: 10.1016/j.prevetmed.2018.12.007.

In the Somali region:

Private: USD 0.04 (0.05 using time value of moey & inflation calculator between 2018 (base) and 2025 (current)).

Public: USD 0.078 (2.12 ETB) (0.10 using time value of moey & inflation calculator between 2018 (base) and 2025 (current)).

Lyons NA, Jemberu WT, Chaka H, Salt JS, Rushton J. Field-derived estimates of costs for Peste des Petits Ruminants vaccination in Ethiopia. Prev Vet Med. 2019 Feb 1;163:37-43. doi: 10.1016/j.prevetmed.2018.12.007.

Burkina Faso

Public channel: XOF 169 ≈ USD 0.30 (0.33 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Private channel: XOF 103 ≈ USD 0.18 (0.20 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Ilboudo GS, Kane PA, Kotchofa P, Okoth E, Maiga A, Dione M. Peste des Petits Ruminants (PPR) Vaccination Cost Estimates in Burkina Faso. Animals (Basel). 2022 Aug 22;12(16):2152. doi: 10.3390/ani12162152.

Senegal, Nigeria, Ethiopia (General)

Senegal: XOF 110 (USD 0.19) to XOF 187 (USD 0.33) (0.21 - 0.36 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Nigeria: XOF 127 ≈ USD 0.22 (0.24 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Ethiopia (pastoral): XOF 55 ≈ USD 0.10; (0.11 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)). (agropastoral): XOF 110 ≈ USD 0.19 (0.21 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Ilboudo, G. S., Kane, P. A., Kotchofa, P., Okoth, E., Maiga, A., & Dione, M. (2022). Peste des Petits Ruminants (PPR) Vaccination Cost Estimates in Burkina Faso. Animals, 12(16), 2152. <https://doi.org/10.3390/ani12162152.>

Somalia

Vaccine dose: USD 0.12 (0.16 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

Total service cost: USD 0.14 per animal (economies of scale from ~20 million animals vaccinated) (0.18 using time value of moey & inflation calculator between 2022 (base) and 2025 (current)).

jue, S., Saeed, K., Maloo, S. et al. Sero-prevalence study to determine the effectiveness of Peste de Petits Ruminants vaccination in Somalia. Pastoralism 8, 17 (2018). <https://doi.org/10.1186/s13570-018-0122-8.>

***Additional Data for Context***

In northwest Ethiopia, vaccination cost was estimated at USD 0.13 per correctly vaccinated animal, with delivery accounting for 44% of the cost.

***Key Cost Influencing Factors***

All cited studies emphasize how major cost drivers vary:

* Delivery logistics and personnel—often >50% of total vaccination cost.
* Farmer opportunity cost—especially large in mixed-crop systems.
* Vaccine wastage—up to 10–33% through missed shots or vial residuals.
* Channel differences—public systems facing higher fixed and overhead costs compared to private.

### Summary Table of Costs

|  |  |  |
| --- | --- | --- |
| **Country / Region** | **Vaccine Cost** | **Total Service Cost\*** |
| Ethiopia (pastoral) | USD 0.10 | USD 0.10 |
| Ethiopia (mixed-crop) | USD 0.20 | USD 0.20 |
| Ethiopia (Somali region) Public | – | USD 0.078 |
| Ethiopia (Somali private) | – | USD 0.04 |
| NW Ethiopia (Metema) | – | USD 0.13 |
| Burkina Faso (public) | – | USD 0.30 |
| Burkina Faso (private) | – | USD 0.18 |
| Senegal | – | USD 0.19–0.33 |
| Nigeria | – | USD 0.22 |
| Somalia | USD 0.12 | USD 0.14 |

\*Exact definitions vary by study (some include only delivery, others wider service components).