HUMANITARIAN ACADEMY · HUMANITAIRES JOBS

Project DPro (PMD Pro) Foundation exam preparation

Course handout · Day 5 : Phase 3: planning scope and schedule

Independent, free preparation for the Project DPro Foundation (PMD Pro) exam: 8 days of 6 hours to master the five project phases (identification and definition, set up, planning, implementation, closure), the logframe, governance, the critical path, risks, change control and the guide's five principles. Guided readings in the free PM4NGOs guide, graded deliverables, quizzes with explanations and three original mock exams, including a full one in the official format (75 questions, 2 hours, 65%). The official exam is taken and paid for with PM4NGOs; this preparation is neither endorsed nor accredited by PM4NGOs.

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Day 5 : Phase 3: planning scope and schedule

Objectives

- Break the scope down into a work breakdown structure (WBS) down to work packages.
- Sequence activities, estimate durations and build a Gantt chart.
- Calculate the critical path and the float of an activity.

Why plan in detail

The proposal and the charter give the frame. The planning phase produces the **detailed plans** needed to carry out and control the work: scope, schedule, resources, budget, procurement, risks, communication, monitoring and evaluation, sustainability. These plans are **integrated**: changing one changes the others.

Planning is not predicting perfectly. In an unstable context, you plan the near term in detail and the rest more broadly (rolling-wave planning), and revise regularly.

Scope and the work breakdown structure

The **scope** describes all the work needed, and only that. The **work breakdown structure** (WBS) breaks it down hierarchically: project → outputs → sub-deliverables → **work packages**. A work package is small enough to be estimated (duration, cost), assigned to someone and monitored.

The 100% rule: the sum of the elements at one level represents 100% of the work of the level above, no more, no less. What is not in the WBS is not in the project: it is the best defence against scope creep.

A **WBS dictionary** describes each package: content, deliverable, person responsible, acceptance criteria.

Activities, dependencies and estimates

Each work package is broken down into **activities**, then their **dependencies** are set. The most common is "finish-to-start": activity B only starts when A ends (you do not pour the slab before digging). There are also start-to-start, finish-to-finish and, rarely, start-to-finish.

Durations are estimated by analogy with past projects, by expert judgement, or with the three-point method: (optimistic + 4 × most likely + pessimistic) / 6. Example: 4, 6 and 14 days give (4 + 24 + 14) / 6 = 7 days.

In our sector, include real calendar constraints: rainy season, holidays, import lead times, administrative authorisations, the agricultural calendar.

The Gantt chart and milestones

The **Gantt chart** shows activities as bars on a time scale, with their dependencies. Everyone can read it and it is used for monitoring: actual progress is compared with the planned bar.

Milestones are zero-duration events that mark an important point: contract signed, end of drilling, mid-term evaluation, interim report to the donor. They are useful for governance and reporting.

The critical path

The **critical path** is the longest sequence of dependent activities: it sets the minimum duration of the project. Any critical-path activity that is late delays the whole project. Other activities have **float** (time they can slip without moving the end date).

Example. A (5 d) then B (10 d) then D (4 d); in parallel, A then C (6 d) then D. Path A-B-D = 19 days; path A-C-D = 15 days. The critical path is A-B-D, project duration 19 days, and C has a float of 10 − 6 = 4 days.

To shorten a project, act on the critical path: add resources (crashing, at a cost) or run activities in parallel (fast tracking, at a risk). Shortening a non-critical activity changes nothing to the end date.

Exercise: calculate the critical path

Data. A: site survey, 6 days. B: purchase of materials, 15 days, after A. C: training of committees, 8 days, after A. D: construction, 20 days, after B. E: commissioning, 3 days, after C and D.

Task. 1) List the paths and their durations. 2) What is the critical path? 3) What is C's float? 4) The supplier announces a 5-day delay on B: effect on the project?

Answer. 1) A-B-D-E = 6 + 15 + 20 + 3 = 44 days; A-C-E = 6 + 8 + 3 = 17 days. 2) A-B-D-E, 44 days. 3) C must finish at the latest on day 41 (start of E); it finishes at the earliest on day 14; float = 27 days. 4) B is critical: the project moves to 49 days, unless D is crashed or another supplier is found.

Key takeaways

- The WBS breaks the whole scope down to work packages; 100% rule.
- Most common dependency: finish-to-start. Three-point estimate: (O + 4M + P) / 6.
- Gantt = bars over time; milestone = zero-duration event.
- The critical path is the longest path; it sets the project duration; its activities have zero float.
- To shorten the project, act on the critical path (crashing or fast tracking).

Quiz

1. According to the 100% rule applied to the WBS:
   A. The project must be 100% complete before the first report
   B. Each work package must represent the same share of the budget
   C. All activities in the WBS are on the critical path
   D. One level covers all the work of the level above, no more, no less

2. Three-point estimate: optimistic 3 days, most likely 6 days, pessimistic 15 days. Estimated duration?
   A. 7 days
   B. 9 days
   C. 8 days
   D. 6 days

3. Paths: A-B-E = 30 days; A-C-E = 24 days; A-D-E = 27 days. What is the float of activity D?
   A. 6 days
   B. 3 days
   C. 0 days
   D. 27 days

4. To finish earlier, the project manager adds a team to a non-critical activity. Effect on the end date?
   A. The end date moves forward by the days saved
   B. No effect: the activity is not on the critical path
   C. The end date slips, because the project cost rises
   D. The critical path changes and the end moves a week earlier

5. What is a milestone?
   A. A long activity on which everything else depends
   B. A budget line reserved for unforeseen costs
   C. A monthly meeting of the steering committee
   D. A zero-duration event marking a key point

6. Pumps cannot be installed before drilling is finished. This is a dependency:
   A. Finish-to-finish
   B. Start-to-finish
   C. Finish-to-start
   D. Start-to-start

7. In an unstable context, which planning practice fits best?
   A. Plan the near term in detail and revise regularly
   B. Plan only the current week, with no overall view
   C. Plan every day for 3 years and never revise the plan
   D. Let the donor plan and follow its instructions

8. Running two activities in parallel that were planned one after the other, to save time, is called:
   A. Fast tracking, which increases risk
   B. Early closure of both activities
   C. Crashing, which costs nothing extra
   D. Levelling, which shortens the project

Quiz answers : 1. B · 2. B · 3. B · 4. B · 5. B · 6. C · 7. C · 8. A